Silica Developments Limited

Storage and Transfer Facility for Waste Glass
At

Shoreham Port, Brighton Terminal, Basin Road South, Shoreham, BN41 1WF

Environmental Management System

Dust and Emissions Management Plan

Reference: EMS-OP-03

16 June 2025
Version 1

DOCUMENT CONTROL SHEET

Version Reference	Date	Reason for Change	Issued by
1	16.06.2025	Application for Environmental Permit	ISL

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1 INTRODUCTION

This Dust and Emissions Management Plan (DEMP) has been prepared as part of the Environmental Management system for Silica Developments Limited (SDL).

With reference to the Risk Assessment and previous Environment Agency correspondence, the operations have a low risk associated with dust. This DEMP deals with general emissions which could include dust and litter. Mud is not associated with this operation.

Background

Since 2012 Silica Developments Limited has leased the land from Shoreham Port Authority (SPA).

Silica Developments currently use a large external bay for storing waste glass, prior to export. This activity is carried out using a S2 Exemption registered with the Environment Agency and following the Regulatory Position Statement 292.[1]

Silica Developments Limited has been based at the port since 2012. There have been no reported dust or litter complaints.

The operations to be carried out under the Environmental Permit will take place inside a building.

Purpose

With reference to Environment Agency guidance, a Dust Management Plan will be required for operations that involve keeping waste glass and if the site is either within 1,000m of an Air Quality Management Area (AQMA) or within 500m of a sensitive receptor.

There are houses within 500m of the site, and the nearest AQMA is within 150m of the site.

Site Location

The procedures relate to the permitted activities at Shoreham Port, Brighton Terminal, Basin Road South, Shoreham, BN41 1WF. The site is centred on NGR TQ 26104 04723.

The site is in Shoreham Port, which is a busy industrial estate for loading / unloading at the dockside. Waste glass will be received and stored inside a building. The building is enclosed on four sides with two vehicular entrances and pedestrian fire escapes.

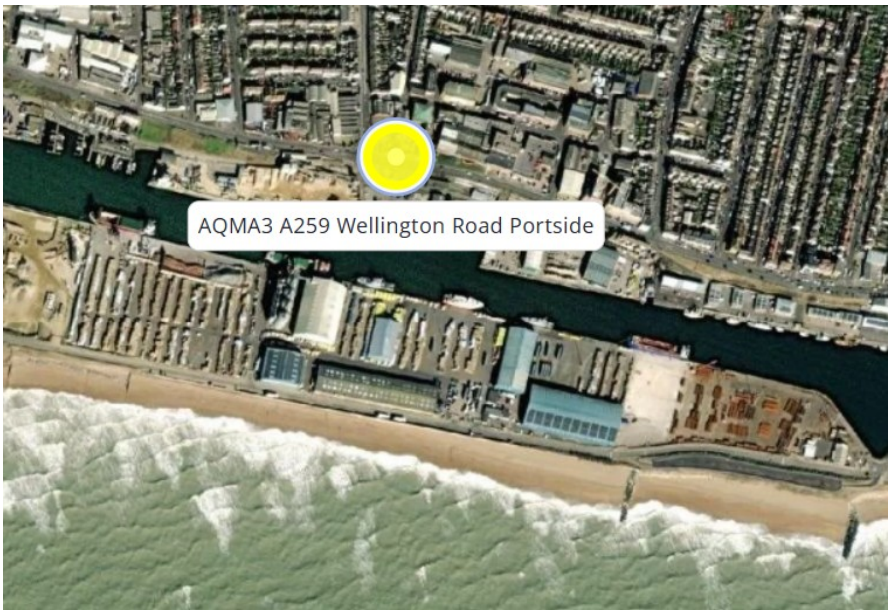
The site is located within the Unitary Authority of Brighton and Hove.

The site is not within an Air Quality Management Area (AQMA). The area was declared an AQMA in 2008, but this was revoked in 2013. The nearest AQMA is AQMA 3 which includes the A293 and a section of the A259 (approximately 150m north of the site).

The reason for the designation is for Nitrogen Dioxide contributions from general traffic, buses, HGV and wharf side industry.

[1] Storing and handling waste glass containing other wastes: RPS 292 - GOV.UK

Brighton and Hove have a realtime portal for providing up to date information on air quality. The nearest monitoring point is located on A259 Wellington Road Portside.



Scope

These Operational Procedures cover the storage and transfer of waste glass pending export.

The site is a bulk haulage facility for storing and transferring waste glass.

No treatment takes place. No other waste will be received.

The site is a bulk transfer facility at an operational port. The transfer facility includes a building for receiving and storing waste glass, and an external area for temporary storage pending loading the ship.

Management System

The Management System covers all aspects of operations and aims to effectively manage the impacts of the business on the environment. The key documents include:

a) Documents: Procedures to set out how to undertake operations and checking for any issues.

b) Forms on which to record information and provide evidence of the system functioning properly.

The EMS will include the following documents:

- EMS OP 01 Operational Procedures
- EMS OP 02 Fire Prevention Plan
- EMS OP 03 Dust and Emissions Management Plan

All documents will be kept at SDL head office, with copies available electronically at SPA.

2 OPERATIONS

Waste Deliveries to Site

The site will only handle waste glass. The following codes will be accepted:

150107	Glass packaging
170202	Glass
191205	Glass
191212	Mixed waste containing Glass
200102	Glass

The handling of glass has a low likelihood of generating dust. No dusty waste will be accepted.

The company will only accept wastes which are allowed under the permit. The site is a specialist facility and therefore no non-permitted wastes will be delivered to the site. All deliveries are pre-booked. There can be no ad-hoc deliveries of waste to the site. This is due to the security controls provided by Shoreham Port.

For glass produced at Material Recycling Facilities (MRF), the following checks will be carried out.

Before accepting a new contract for the supply of waste glass, a representative of SDL will visit the source site and visually inspect the glass. Samples will be collected for analysis. The mixed glass is typically from large Material Recycling Facilities operated by established, reputable waste management companies (e.g. Biffa, Veolia).

SDL will request the previous 12 months testing data generated at the source site. MRF sites are required to carry out output sampling.

The testing will check the glass by weight. A sample is taken and weighed. It is then hand sorted to remove any incidental material (cardboard, metal, plastic and organic). The separated fractions are all weighed. The acceptable target for SLD will be 95% glass by weight.

Once these checks have been used to classify the waste and confirm it is permitted, the producer will be registered with SDL for delivering waste glass.

During the first week of deliveries from a new source, each load is checked. A sample of glass is taken every 250 tonnes for weight testing.

SDL visually inspect the waste glass stockpile twice per week and maintain a weekly photographic record.

Glass produced at MRFs can be classified as 191205 Glass, or 191212 Waste Glass containing other non-hazardous waste. The producer (MRF operator) will be required classify the waste glass leaving their site.

SDL will carry out compliance checks to confirm the correct code has been used. With reference to the guidance[2], the decision should be made on a case by case basis.

As part of the classification, SDL will confirm if the source site is a Mixed Dry Recyclable Facility (MRF). This will help to confirm that the input material is non-hazardous waste. SDL will review the site's Waste Acceptance Procedures and check their procedures for removing non-compliant waste such as vapes and batteries.

The waste acceptance procedures at the MRF will be important to ensure that any mixed glass containing non-hazardous waste (EWC191212) is non hazardous. The MRF operators also work with Waste Collection Authorities to inform residents and businesses about the materials that can be placed in the collection bin. This will help reinforce the position that batteries and vapes should not be placed in the recycling bin.

With reference to the Environment Agency guidance, when the composition of the waste and its components is widely understood not to include hazardous substances, and visual inspections would easily identify materials likely to be hazardous, then the waste assessment may not need to include sampling and testing.

Prior to removal from the MRF, the waste producer will carry out periodic sampling to confirm the weight of glass, and other components. At this stage, the visual assessment will allow the operator to remove any non-compliant waste such as batteries and vapes.

The glass will typically be from a dry mixed recyclable input which is mixed with paper, plastics, and metal cans only. The input and output waste are consistent and as such no testing will be required.

As the waste is unloaded at the bulk storage facility, any incidental items of waste (plastic bags, cardboard) will be placed in a general waste bin.

For other glass, SDL will visit the source site and check the procedures generating the glass. For single source collected glass, no testing is required.

Once weighed, the driver will be provided directions to the building.

The loading shovel operator will be present at in the building and will direct the driver to unload into one of the bays inside the building, depending on the load.

Once unloaded, the driver will leave the site via the weighbridge.

The loading shovel operator will check the waste, removing any clear and obvious non-compliant waste such as plastic sacks. These will be placed in a quarantine container.

The loading shovel driver will push the waste into the storage bay.

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2 Glass from waste treatment facilities, Guidance LIT 72733, published 21 May 2024.

EMS-OP-03
Dust Management Plan

Overview of Waste Processing and Dust Controls

The site layout is shown on Drawing No. SDL-SP-LAY-01. This will be a facility for bulk storage and transfer only. The drawing shows the site infrastructure which includes bay walls and impermeable surface. As set out in this DEMP, there is no requirement for a wheel wash, or for dust suppression, and therefore these are not shown on the site layout plan. A road sweeper in based in the Port and is used on all estate roads and operational yards. There is also a bowser and trailer used within the port. These will not be permanently based in the permitted site and are not shown on the site layout plan.

The bulk storage facility includes a building in which to receive and store waste glass. There will be separate storage bays inside the building for different waste glass.

Bay 1 will be used for storing MRF Glass. This is coded EWC 191212 mixed waste containing glass, or 191205 glass. This waste has been derived from Material Recycling Facilities (MRF).

Bay 2 will be used for storing glass with EWC codes 191205, 150107 or 200102.

It is anticipated to have 6-7 deliveries per day.

All waste glass will be delivered by road in fully enclosed HGVs. The waste is unloaded by tipping the glass from the vehicle. The vehicle remains covered, and only the back is opened to release the glass. The glass is released from a height of about 1.5m. This creates a small stockpile. The HGV slowly moves forward to release more glass which creates a “windrow” shape that is about 1.5m high. This will take place inside the building. This avoids any tracking through the deposited glass.

Once unloaded, the HGV wheels are checked, and any glass or debris will be removed by a broom. The debris will be placed in the quarantine container. The glass will be returned to the stockpile. This takes place before the vehicle leaves the permit boundary.

Once the HGV has left the site, the loading shovel driver will push the waste into the corner of the bay, in preparation for another delivery.

The waste will be removed from the building when a ship is ready for loading. The waste glass will be loaded onto a bulk haulage vehicle and transferred to the temporary holding area outside. There will be a concrete wall to provide a contained area. The crane will be positioned north of this wall and will grab the waste glass and load the ship.

This external area will be used for temporary storage only pending loading for export.

The barge is booked to remove waste at least monthly.

Table 1 –Wastes Typically Accepted at the Site

EWC Code	Description	Risk	Mitigation
150107	Glass packaging	Low risk of dust generation. There may be occasions during the summer or during a prolonged dry spell, when dust could be generated during unloading / loading operation. There is a low-medium risk of litter generation. Some lightweight waste may be present in loads containing EWC191212. No treatment takes place No dusty waste is accepted at the site	General good housekeeping practices. Waste unloaded and stored inside a building. The building will be checked daily. If dust becomes a problem, the operator will review the waste storage procedures and if necessary implement dust suppression. Once emptied, a bay will be cleaned. The TCM or site supervisor will carry out daily checks and implement litter picking if required. The TCM or site supervisor will carry out additional checks following a delivery and during loading.
170202	Glass		
191205	Glass		
191212	Mixed waste containing Glass		
200102	Glass		

Waste Storage

Bay 1

Bay 1 will be used for storing MRF Glass. This is coded EWC 191212 mixed waste containing glass, or 191205 glass. This waste has been derived from Material Recycling Facilities (MRF).

Whilst the MRF is used to separate recyclable wastes, the mixed glass can contain a small amount of other materials such as cardboard, plastic and metal. The composition will determine the EWC, and this will be carried out on a case by case basis.

No more than 4,000 tonnes of waste glass will be stored in Bay 1 at any one time.

Bay 2

Bay 2 will be used for storing glass with EWC codes 191205, 150107 or 200102.

No more than 4,000 tonnes of waste glass will be stored in Bay 2 at any one time.

The total amount of glass that could be stored on site at any one time will be 8,000 tonnes.

The site will handle up to 100,000 tonnes of waste glass per annum.

Bays may be interchangeable depending on market conditions, but loads containing EWC191212, will not be mixed with any other waste glass code.

Waste Treatment

No waste treatment will take place. This is a bulk storage facility for transferring waste glass to ships for export.

Mobile Plant and Equipment

The operation will use the following equipment:

- Loading Shovel
- Crane with clamshell attachment

The plant is managed by SPA. SPA provide the plant and operators for loading ships.

A programme of routine planned maintenance is provided for each item of plant and machinery, to prevent breakdown and faults.

All faults which require corrective action will be reported to the TCM to be implemented.

The plant and equipment will be subject to service agreements with the manufacturer and/or supplier. Where appropriate, these agreements will include a 24 hour call out facility.

Alternative plant and machinery is available on the Port for contingency measures.

An anti-idling policy will be in place to ensure that engines are switched off when not in use.

Plant and machinery are not permanently based at the permitted site. They are deployed to businesses on the port for planned movement of materials.

3 DUST AND LITTER MANAGEMENT

Responsibility for Implementation of the DEMP

The Technically Competent Manager (TCM) has responsibility for ensuring these procedures are adhered to which includes communication with staff and contractors, and the provision of adequate training. The TCM is responsible for updating and re-issuing these procedures as necessary and ensuring all staff are trained in new procedures. The TCM will be the main point of contact for ensuring implementation of this plan. In their absence, the Site Supervisor will be responsible for implementation.

All staff will be trained in these procedures. The TCM is responsible for delivering training and maintaining records. Training is reviewed on an annual basis. The site office has a dedicated training room to deliver all training and tool box talks.

All staff will be trained to a standard which enables them to perform the responsibilities, and this will include understanding the DEMP (under Amenity Management).

A record of staff training will be kept for each staff member which includes inductions to new processes and procedures as needed. The following training matrix will be adopted to guide training needs.

It must be stated that staff are not permanently based at the permitted site. All SPA staff involved in the movement of waste glass will be trained to understand the requirements of the Environmental Permit.

For amenity management, the training will include:

- Identifying conditions that may give rise to dust emissions.
- Implementing dust suppression
- Reporting dust emissions to site management
- Sheeting vehicles
- Speed limits on site
- Addition controls for Met Office Red Alerts
- Handing complaints
- Reporting faults with any equipment that may increase risk of emissions.

All staff will receive induction training within 1 month of the permit being issued. Follow up training will take place annually, or sooner if DEMP has been updated.

For all visitors or contractors, a site safety briefing will be conducted in the main office. This will include H&S and an overview of amenity management. For contractors that may be employed to carry out repairs or maintenance, they must notify the site management of any activity that may cause dust emissions and ensure that mitigation measures are in place. Visitors and contractors can view the DEMP in the site office if required.

If there are any changes to the operation which affect the dust management at the site, the TCM will carry out revised training and update the Management Plan accordingly.

The DEMP will be reviewed on an annual basis or sooner if requested by the EA. It will also be updated if the operator changes the operation.

All documents supporting the EMS and DEMP will be kept in the main office.

Sources and Control of Fugitive Dust/Particulate Emissions

The following are potential sources of dust emissions:

- Vehicles leaving the site with debris on their wheels
- Waste unloading
- Moving materials
- Storage
- Loading ships

It is also important to identify other potential sources of dust emissions in the locality. These are listed in Table 2.

Table 2 - Sources of Dust and/or other Emissions

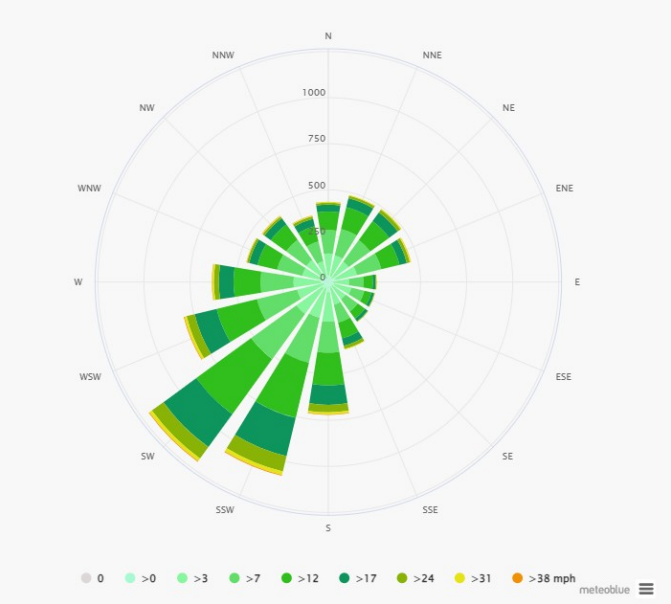
Company	Address	Type of Business	Distance from site boundary (m)
Tarmac	34 Basin Rd S, Southwick, Brighton BN41 1WF	Aggregate Processing – large open facility.	550m West
Cemex	Halls Wharf, Wellington Rd, Brighton and Hove, Brighton BN41 1DN	Concrete batching and aggregate processing. Large open facility	370m North West
Day Aggregates	Basin Road N, Brighton BN41 1DN	Aggregate Processing – large open facility.	215m North West
Kendall Aggregates	25 Basin Rd S, Brighton and Hove, Brighton BN41 1UY	Aggregate processing	65m East
Travis Purkins	Basin Road N, Brighton BN41 1DN	Builders Yard, external storage of wood.	60m North
General	Shoreham Port	All other activities associated with the port.	Adjoining site and opposite.

With reference to the wind rose for the site, the prevailing wind direction is from the south west and therefore areas to the north east of the site are down prevailing wind of the site.

Windrose data has been obtained for Shoreham by Sea.

SPA monitor the weather and sea conditions continuously.

Figure 1 - Wind Rose Data[3]



3.1 For the purposes of identifying the nearest receptors, a search area of 1km has been used.

3.2 Figure 2 shows the site and broad location of the main receptors within 1km. Table 3 provides a description of those receptors and the distance and direction from the site. The distance has been measured from the permit boundary, at the closest point. The receptors list and plan have been derived from the Environmental Risk Assessment and identify all receptors that may be sensitive to a risk. Not all listed will be sensitive to dust.

3.3 In terms of the sensitivity to dust the following has been adopted:

[3] Simulated historical climate & weather data for Shoreham-by-Sea - meteoblue

Type of Receptor	Sensitivity
Residential, schools, hospitals, nursing homes, Statutory Designations (SSSI, SPA, SAC)	High
Industrial premises, recreational grounds, Non-Statutory Designations	Medium
Roads, Industrial premises	Low

There may be other unique receptors that do not fall within any of the above categories. These have been considered separately depending on the nature of the business and use. People on footpaths are transient receptors.

Figure 2 - Site Setting and Receptors (The permitted site is shown with a green boundary). Blue shows 500m radius from centre point of site. The red line shows 1km radius from the centre of the site.

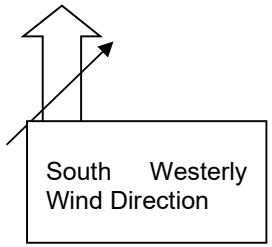


Table 3 – Receptors

Receptor	Legend	Type	Sensitivity to Dust	Distance and Direction from Permitted site
River Adur	A	Surface Water	Negligible	Immediately North
English Channel	B	Surface Water	Negligible	140m South
Shoreham Port	C	Industrial	Low	Immediately South, East and West
Aggregate Processing	D	Industrial	Low	530m West
Aggregate Processing	E	Industrial	Low	220m North West
Industrial Estate	F	Industrial	Low	310m North West
Industrial Estate	G	Industrial	Low	180m North
Fishersgate Terrace	H	Residential	High	530 North West
Industrial Estate	I	Industrial Estate	Low	65m North
Kingsway	J	Residential	High	160m North East
Western Esplanade	K	Residential	High	485m South East
Wish Park	L	Recreational	Medium	835 North East
Hove Lagoon	M	Recreational	Medium	660m East
Middle Street	N	Residential	High	230m North West
A259	O	Road	Negligible	150m North
Train line	P	Railway	Negligible	710m North
St Marys Primary School	Q	Education	High	645m North West
Vale Park	R	Recreational	Medium	475m North West
Kingsway	S	Residential	High	125m North East

Risk Assessment and Control Measures

The waste will be stored inside a building. The building has four sides and a roof, with two entrances for vehicles, and pedestrian fire escapes.

The building will protect the waste glass from the prevailing weather conditions.

Once a ship is scheduled to receive waste glass, SPA will arrange to transfer the waste glass to an external holding area. The glass will be transferred using an enclosed vehicle. The holding area will include a 3m high concrete wall. The crane will be positioned on the north side of the wall and will load the glass from the storage area into the ship.

It is anticipated that that a ship will remove waste glass monthly. This will require the temporary storage of waste glass outside for 2-3 days at a maximum. Once the ship has been loaded, any excess glass will be returned to the storage building.

The nearest sensitive receptors are located north east and north of the site. The houses will be protected by the waste storage building and external wall, which will reduce the likelihood of any dust and litter being transferred from the source site.

The site has been designed to prevent emissions being created and leaving the site boundary. The following procedures will be implemented to prevent emissions to air from waste handling.

- Waste is delivered in enclosed vehicles.
- Low likelihood of tracking due to nature of the waste.
- Site is an impermeable surface, which is easier to clean.
- Vehicles travel on road surfaces to access and leave Port.
- Storage of waste within a building.
- Temporary storage of waste behind a concrete wall pending loading.
- Speed restriction of 5mph on site limit dust arising from waste vehicles and mobile plant.
- SPA will check the entire site for evidence of any debris and arrange cleaning as required.
- Use of bowser and trailer to dampen working yard. SPA apply this to the entire Port. This is not kept within the permit boundary and is not shown on the site plan. It is within the control of SPA and is kept in the port.
- Use of road sweeper. SPA use a road sweeper for the estate. This is not kept within the permit boundary and is not shown on the site plan. It is within the control of SPA and is kept in the port.
- Mobile plant will be cleaned.
- Drop heights will be reduced to mininise dust emissions.
- Transfer to ship uses clam shell attachment to crane (which is enclosed).
- Stockpiles will be dampened.

- No treatment takes place.
- Bays to be cleaned when empty.
- Following a delivery, the site manager will inspect the outside area and check for any debris. If debris is found, arrangements will be made to sweep the area. Any lightweight waste will be placed in the quarantine bin. Any glass will be returned to the stockpile.

Dust Suppression

A formal dust suppression system is not necessary for this operation. There is a low likelihood of dust generation due to the nature of the waste and operation.

The external stockpile will be monitored and if loading is due to take place during dry weather conditions, the waste can be dampened using a bowser prior to and during loading. The bowser is located within the port and arrangements can be made to deploy it the working area.

Control of Mud and Debris

The nature of the operations will not generate mud. In any event, the public highway is located approximately 600m from the permitted site. The internal estate roads are under the control of the SPA. The SPA will deploy a road sweeper to clean all internal estate roads.

If SDL observe any issues within their permit boundary or access road, they will notify SPA to arrange for the road sweeper to be deployed.

The waste glass will be in a solid state.

The site will be concreted, which provides an impermeable surface and is easier to keep clean.

Unloading will be overseen by site staff to prevent vehicles tracking through deposited waste.

Before exiting the site, all vehicles will be stopped and visually inspected by trained staff to reduce the risk of any debris being tracked off-site.

The deposit of material on the access road or public highway will be treated as an emergency and will be cleared immediately using either a brush and shovel and/or road sweeper. SPA will notify SDL in the event of such an occurrence to implement corrective action.

There have been no reported complaints associated with the existing operations. There have been no reported issues from SPA.

The site manager and / or the SPA will carry out daily checks. Any noticeable debris located outside of the bay wall will trigger the following response:

- TCM or Site Manager notices debris outside the permit boundary (associated with the permitted use).
- TCM or Site Manager will notify SDL senior management team and the SPA.

- SDL and / or SPA will notify site based operatives to clean the area using brushes (manually separating any lightweight wastes into the quarantine bin and placing glass in the stockpile).
- SDL and / or SPA will arrange road sweeper to clean the wider estate road network.
- Actions will be recorded in site diary.

The combination of the waste building, external concrete wall and daily checks will minimise the likelihood of any litter escaping the site boundary. New deliveries will be unloaded in the bay at a low elevation, and a machine driver will push the waste into the stockpile. The unloading will take place within the confines of the building. This reduces the likelihood of litter being raised and escaping the site boundary.

Routine Cleaning

The bays will be cleaned following a transfer period. That is, when a ship has been loaded and the bay cleared of waste. This is recorded by the operator in the site diary.

The cleaning schedule is provided in Table 4.

Table 4 – Cleaning Schedule

	Daily *	Weekly	Annually
Site Entrance	✓	✓	
Site Access	✓	✓	
Storage Bays – concreted	✓	✓	Full site Audit
Plant	✓	✓	Subject to Planned Preventative Maintenance

*carried out by SPA as part of their overall function of maintaining the Port.

The SPA site management team also has access to the CCTV, which is monitored throughout the day.

This cleaning schedule is implemented at the frequencies set out in Table 4.

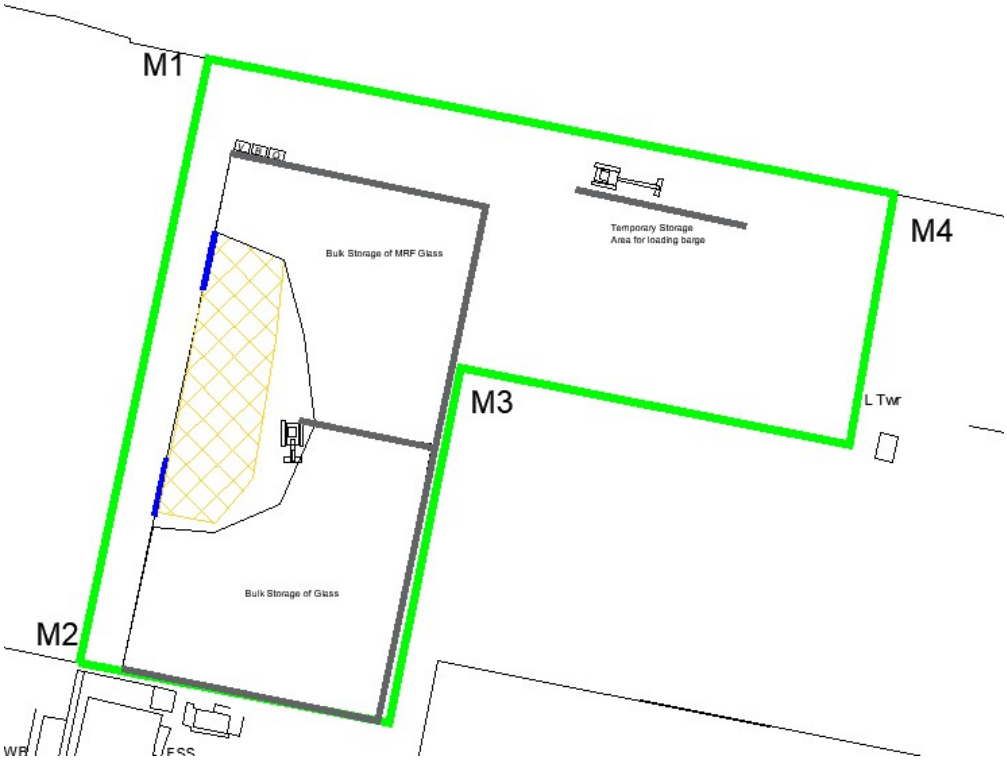
The TCM will follow up any complaints or incidents with a full inspection.

Visual Monitoring

The site management and site operatives will make visual inspections of dust emissions around the entire site and perimeter. Additional monitoring may be carried out during times of dry/windy weather conditions or should SPA operatives observe significant levels of dust. The monitoring will be carried out at intervals while the site is receiving or transferring waste. Should it be observed that dust or litter is being emitted from the site, notes will be made describing the amount, direction and source of the emission.

The following monitoring locations are provided.

Figure 3 Monitoring Locations



Following the monitoring, the TCM, site manager or SPA staff will report any issues to the SDL senior management team.

SDL representatives will meet with SPA to discuss any recurring issues and proposed corrective measures. This could include increases to the ship movements to remove waste more frequently, increase the frequency of use of road sweeper, increase frequence of site cleaning.

Any such measure will be implemented and monitored for effectiveness. If the measures are effective, they will be incorporated into the DEMP and form part of the routine controls.

No out of hours monitoring is proposed. The port is closed with no access permitted. CCTV will remain active.

If there has been Met office warnings about high winds during the nighttime, SDL will arrange for the site infrastructure to be checked the following morning, which will include checking the building, and for any litter escape. SDL will arrange for any litter to be collected and managed.

Table 5 – Monitoring Locations.

Monitoring Location	Target Area
M1	To check if dust or litter is being generated and detected outside the site boundary.
M2	
M3	
M4	

The results of monitoring exercises and any remedial action taken will be recorded. The name of the inspector will be stated in the site's diary / inspection form for each day of operation.

Operational Failure

This is unlikely to occur and if it did occur, it will not lead to dust generation. There is no waste treatment on site.

SPA provide the plant and machinery for transferring the waste. The plant is maintained and if one item breaks down, there are alternative supplies within the port.

The use of water for dust suppression is very low. SPA has mains supply for replenishing the water bowser.

No history of water shortages.

SPA has Sustainability Agenda which includes Net Zero, decarbonization and water management, including roof water capture.

Table 6 provides the risk assessment for dust and the remediation/control measures.

Table 6: Source-Pathway-Receptor Routes

Source	Pathway	Receptor	Type of impact	Control Measures
Unloading and transferring waste	Tracking dust / debris on wheels and vehicles	Local Roads	Visual soiling, also consequent resuspension as airborne particulates	Nature of the waste will minimise risk associated with tracking dust / debris on to the road network. All vehicles delivery and collecting waste will be sheeted. Speed restrictions on site (5mph). There is over 600m of internal roads before entering public highway. Vehicles to be checked before leaving the site. Any debris will be removed by a broom. Anticipated 7 loads per day. The permitted use will only accept pre-booked deliveries. The checking and cleaning strategy can be planned around this number of deliveries. Waste stored inside a building will keep it dry and less likely to be tracked.
	Atmospheric dispersion	Nearby industrial premises (workers and pedestrians).	Visual soiling and airborne particulates	All waste deliveries in enclosed vehicles. The waste will be unloaded and stored inside a building. Drop heights will be kept to a minimum. External storage will be short duration to load the ship.

Source	Pathway	Receptor	Type of impact	Control Measures
	Atmospheric dispersion	Residential properties	Visual soiling and airborne particulates	The nearest residential receptors are approximately 125m north east of the site, separated by the River Adur and the industrial estate. There is a low risk associated with this potential impact.
Debris (other waste within glass, for example fragments of plastic, paper, metal)	Falling off lorries	Local Roads	Visual soiling, and resuspension as airborne particulates	All vehicles delivering waste will be enclosed or sheeted. Speed restrictions on site (5mph). This event is unlikely to occur. Waste glass will leave the site via a barge. Other residual waste such as collections of plastic, paper and metal, will be placed into a 1100l Euro bin (or similar), which is lidded and will be emptied into a refuse collection vehicle which services the estate.
Vehicle exhaust emissions	Atmospheric dispersion	All	Airborne particulates	Regulatory controls and best-practice measures to minimise source strength. Low use of mobile plant.
Non road going machinery exhaust emissions	Atmospheric dispersion	Local Environment	Airborne particulates	Regulatory controls and best-practice measures to minimise source strength.

Table 7: Measures that will be used on site to control Dust and Litter

Abatement Measure	Description / Effect	Overall consideration and implementation	Trigger for implementation / Justification
Preventative Measures			
Enclosure within a building	Creating a solid barrier between the source of dust and particulates and receptors is likely to be the most effective method of control, provided that the building entrances and exits are well managed.	Very effective despite costs and the high potential for disruption to already operational sites. New sites are strongly recommended to fully enclose from the outset. This is a required 'standard design feature' by Office of the Deputy Prime Minister (ODPM) guidance. **If your site is in a London Borough you are likely to be required to fully enclose your activities in a building.** If your site is in a sensitive location then you are likely to be required to fully enclose your activities in a building. Ensure that procedures are in place to manage the building and its integrity.	The site is not located in a London Borough, nor is it in an Air Quality Management Area. The existing infrastructure is sufficient at controlling litter. Dust is not associated with the activity. No treatment takes place. The waste will be unloaded and stored inside a building. Temporary storage outside for loading the ship.
Negative pressure extraction	Within enclosed buildings, controlled extraction can be undertaken to ensure a constant negative pressure relative to the outside air. This system should prevent the emission of particulates from any openings in the building. Extracted air should be treated through a suitable filtration	Very effective. Reduces H+S risks for staff working on site Operational costs need to be considered.	Not Relevant

Abatement Measure	Description / Effect	Overall consideration and implementation	Trigger for implementation / Justification
	system prior to discharge to atmosphere. This method is more frequently applied for odour control.		
Dust Extraction Systems	A large variety of abatement technologies exist for the removal of dust and particulates from a flowing gas and have typically been applied to combustion plants and other sites where controlled emissions of particulates occur. These include Electrostatic Precipitators (ESPs), wet scrubbers, baghouses (bag filters), viscous media (e.g. oil) filters and gravitational settling. Although not all of these may be appropriate for dust and particulate suppression at waste management sites, and they cannot be applied to controlling external fugitive emissions, they may be effective when coupled with local exhaust extraction, ventilation or negative pressure extraction systems from enclosed buildings to remove dust and particulates from the airstream.	Very effective despite costs and potential disruption to already operational sites. Operational costs may be prohibitive. Should be identified clearly in the site management system and implemented as appropriate measures. **Note:** sites in Air Quality Management Areas are finding this the only effective way to control dust and particulate emissions so point sources at waste transfer stations are becoming more common now. The proliferation of enclosed “super” waste transfer stations makes this even more pertinent	Not Relevant
Site / process layout in relation to	Locating particulate emitting activities at a greater distance and downwind from receptors may reduce receptor	May be worthwhile in combination with other measures to reduce dust and particulate generation.	The site is a straightforward bulk storage facility for storing and transfer waste glass.

Abatement Measure	Description / Effect	Overall consideration and implementation	Trigger for implementation / Justification
receptors	exposure, provided that emissions from the source are not dispersed over significant distances.	If at all possible discuss at pre-application and prior to site design if the activity is known to be cause lots of dust and particulates. For existing sites this will require the operator to think about moving the site around or proposing temporary areas in inclement weather.	Waste storage inside a building. The concrete wall outside will provide a barrier to protect receptors located north of the site. This will only be for a temporary period to load the ship. No issues with dust on this site. No complaints received associated with the storage of waste glass (under the S2 exemption).
Site speed limit, 'no idling' policy and minimisation of vehicle movements on site	Reducing vehicle movements and idling should reduce emissions from vehicles. Procurement policy to only purchase clean burn road vehicles and non-road going mobile machinery. Enforcement of a speed limit may reduce re-suspension of particulates by vehicle wheels.	Easy to implement as part of good practice. Should be identified clearly in the site management system and implemented as appropriate measures.	Low level use of the site. Up to 6-7 HGV deliveries per day. All pre-booked to avoid queuing. The site based plant is only used to facilitate the unloading and loading processes. Otherwise, no plant is based on the site. No plant is idling.
Minimising drop heights for waste. Use of enclosed chutes for waste drops/end of conveyor transfers and covered skips / storage vessels.	Minimising the height at which waste is handled should reduce the distance over which debris, dust and particulates could be blown and dispersed by winds. Enclosing processes will further reduce dispersion.	Relatively easy to implement at many sites. These steps should be identified clearly in the site management system and implemented as appropriate measures.	The unloading process from the HGV involves the back door to be opened with the main body still covered. The HGV tips the waste from a low height (1.5m) into a small stockpile, the vehicle will move forward to create a "windrow" shape stockpile that is only about 1.5m high. The loading shovel will then push the waste into the corner of the bay. The drop height for unloading is minimised. When loading the barge, a clamshell attachment is used. This provides an enclosed vessel for transfer waste glass from the storage

Abatement Measure	Description / Effect	Overall consideration and implementation	Trigger for implementation / Justification
			bay into the barge. The drop height is minimised for this process. The barge berths alongside the dock and is loaded immediately in front of the bay, minimising the transfer distance.
Good house-keeping	Having a consistent, regular housekeeping regime that is supported by management, will ensure site is regularly checked and issues remedied to prevent and remove dust and particulate build up.	Easy to implement and requires minimal equipment. Encourages a sense of pride and satisfaction amongst the staff which promotes vigilance and a positive culture. Staff should target the areas not caught by the road sweeper and other cleaning apparatus. Details on the frequency, job roles and areas covered should be documented here.	Good housekeeping is maintained at the Port. This is overseen by SDL and SPA staff.
Sheeting of vehicles	Prevents the escape of debris, dust and particulates from vehicles as they travel.	Relatively easy to implement at many sites. Should be identified clearly in the site management system and implemented as appropriate measures.	All waste delivery vehicles will be fully enclosed.
Hosing of vehicles on exit	May remove some dirt, dust and particulates from the lower parts of vehicles although likely to be less effective than a more powerful wheel wash.	May be worthwhile where wheel wash installation is not feasible, or where the wheel wash does not achieve the desired outcome. This should be in the site procedures and training. If the action works as a control measure, then consideration must be given to installing a wheel wash as the appropriate measure.	The process of unloading a waste delivery vehicle, requires the HGV to move forward to enable the waste to leave the vehicle. This prevents any tracking. Once unloaded, the vehicle will be checked and if necessary, a broom will be used to remove any debris from the wheels and chassis.
Ceasing	Mobilisation of dust and particulates is	Likely to reduce dust and particulate	The SPA monitor weather and sea conditions

Abatement Measure	Description / Effect	Overall consideration and implementation	Trigger for implementation / Justification
operation during high winds and/or prevailing wind direction	likely to be greater during periods of strong winds and hence ceasing operation at these times may reduce peak pollution events.	emissions, however, not a long-term solution. Procedures should be in place to identify when operations will cease. May require a weather station to be installed.	continuously. Whilst the Met Office may issue Warnings, the conditions may not be the same at the Port. The SPA makes the final decision on port operations based on Health and Safety. General procedures are: Red Warning – No ships enter the Port. Amber and Yellow Warning - No ships enter the Port, unless sea conditions support this. Red Warning – No transfer of waste will take place. The Port may shut for all operations. Amber and Yellow Warning – Transfer may take place subject to SPA approval. Extra checks will be carried out during and following these warnings to make sure that any windblown debris is retrieved and sorted.
Installed wheel wash	Provides a high pressure wash of vehicle wheels and lower parts (including under body) using a series of jet sprays. More effective if vehicles drive through the wheel wash slowly in order that there is sufficient time for dirt to be removed.	Proven results where wheel wash is well designed and vehicles drive through slowly on entry and exit. Should be identified clearly in the site management system and implemented as appropriate measures. The range of wheel wash technology is rather large and to avoid any knowledge gaps, this section should detail specifics about the wheel wash. Consider using photos to assist. You should consider the placement and	No wheel wash is required. The site will only handle waste glass. There is no risk associated with mud and therefore a wheel wash is not required. The process of unloading a waste delivery vehicle, requires the HGV to move forward to enable the waste to leave the vehicle. This prevents any tracking. Once unloaded, the vehicle will be checked and if necessary, a broom will be used to remove any debris from the wheels and chassis.

Abatement Measure	Description / Effect	Overall consideration and implementation	Trigger for implementation / Justification
		positioning of the wheel wash in this document too along with contingency plans for downtime or breakdown.	
Easy to clean concrete impermeable surfaces	Creating an easy to clean impermeable surface, using materials such as concrete as opposed to unmade (rocky or muddy) ground within the site and on site haul roads. This should reduce the amount of dust and particulate generated at ground level by vehicles and site activities.	Considered good overall based on dust and particulate reduction but potentially costly and disruptive to retrofit. For sites that have concrete surfaces ensure there are maintenance and cleaning procedures in the management system and they are implemented.	Entire permitted site and surround estate roads are fully surfaced to enable a road sweeper to be used to clean.
Minimisation of waste storage heights and volumes on site	Minimising the height at which waste is handled should reduce the distance over which debris, dust and particulates could be blown and dispersed by winds. Reducing storage volumes should reduce the surface area over which particulates can be mobilised.	Likely minimal return on potentially costly layout changes. The amount of waste that can be managed on site without causing dust and particulate pollution should be identified in the management system and may have to be reduced if it is considered an appropriate measure.	Storage within a building, with concrete push walls. The building will provide the containment required to prevent windwhip. No limits on storage heights necessary.
Reduction in operations (waste throughput, vehicle size, operational hours)	Reducing the amount of activity on site, including no tipping, shredding, chipping or screening of high risk loads during windy weather as well as associated traffic movements should result in reduced emissions and re-suspension of dust and particulates from a site.	Effective in terms of dust and particulate reduction but unlikely to be popular/implemented by operators. It may be the only option when other steps fail. Ensure the site has procedures to reduce activity on site if required through complaints or known issues, or adverse weather conditions. This may include installing a weather station to alert the site to windy weather and when they need to reduce agreed activities.	The site operations are limited in any event. 6-7 HGV deliveries per day allows the operator to control the waste volumes on site. No treatment takes place. The transfer of the waste glass will be subject to tides and turnaround times for the vessel. The SPA monitor weather and sea conditions continuously. Whilst the Met Office may issue

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			Warnings, the conditions may not be the same at the Port. The SPA makes the final decision on port operations based on Health and Safety. General procedures are: Red Warning – No ships enter the Port. Amber and Yellow Warning - No ships enter the Port, unless sea conditions support this. Red Warning – No transfer of waste will take place. The Port may shut for all operations. Amber and Yellow Warning – Transfer may take place subject to SPA approval. Extra checks will be carried out during and following these warnings to make sure that any windblown debris is retrieved and sorted.
Remedial Measures			
Netting / micro netting around equipment	Erecting netting around equipment that could give rise to large amounts of dust and particulates may be effective within the site boundary and prevent their dispersion off-site / their re-suspension within the site.	Reduces wind speed across the site which indirectly controls the potential for dust and particulate emissions. Maintenance should be covered in the management system and procedures. Effective for use as litter netting, but not for stopping dust from leaving the site boundary.	No dust netting is required. Waste stored inside a building. Litter netting may be installed long the front of the concrete wall. The need for this will be monitored during the first 12 months of the permit being issued.
On-site sweeping	Sweeping could be effective in managing larger debris, dust and	Easy to apply but less effective than other measures.	The site is checked daily. The TCM or Site Manager, as well as SPA will

Abatement Measure	Description / Effect	Overall consideration and implementation	Trigger for implementation / Justification
	particulates but may also cause the mobilisation of smaller particles. Road sweeping vehicles damp down dust and particulates whilst brushing and collecting dust and particulates from the road surface, particularly at the kerbside. This may generate dust and particulate movement that may become a Health and Safety issue if the filters and spray bars on the sweepers are not maintained.	Should be covered in the management system and procedures and implemented thoroughly. Be specific and consider including photos of the apparatus. The range of roadsweeping equipment is very broad and you should detail what is being used. We would expect to see training procedures to ensure that staff are clear on what needs to happen and when. We would expect to see maintenance schedules detailing when consumable items on road sweepers are replaced (Filters, brushes etc).	activate the cleaning requirements following daily routine checks or if observed during general site visits. CCTV is monitored and this can also be used to activate sweeping. When a bay has been emptied, it will be swept to remove any residual debris.
Site perimeter netting / micro netting	Erecting netting around the site perimeter may capture released debris and dust and particulates prior to it being dispersed off-site.	Reduces wind speed across the site which indirectly controls the potential for dust and particulate emissions. Maintenance should be covered in the management system and procedures. Can look untidy and dirty creating negative impression of the facility. Not very effective at reducing dust and emissions from leaving the site boundary.	No netting is required. Waste stored inside a building. Litter netting may be installed long the front of the concrete wall. The need for this will be monitored during the first 12 months of the permit being issued.
Water suppression	Damping down of site areas using hoses can reduce dust and particulate	Quite water intensive. Can reduce the calorific value of the material which should be	Dust is not associated with this waste. SPA operates a tractor and bowser that will be

Abatement Measure	Description / Effect	Overall consideration and implementation	Trigger for implementation / Justification
with hoses & water jets	re-suspension and may assist in the cleaning of the site if combined with sweeping.	considered if sent for energy recovery/biomass type operations. Maintenance should be covered in the management system and procedures.	used to dampen the access road and yard area. During prolonged dry periods, the bowser will be used to dampen the storage bay prior to waste being unloaded. No suppression is required. Debris and litter will be removed manually using brooms.
Water suppression with mist sprays	Installation of mist sprays around sites, at building entrances/exits and within buildings at point source emissions like conveyors, trommels etc. It can also assist in the damping down of dust and particulates, therefore, reducing emissions from site.	Very effective at controlling point source emissions of dust and particulates. Can be installed to conveyors and areas where waste is dropped. 'Halo' rings can be fitted to conveyor drops on concrete crushers and screeners to minimise dispersion. Not effective for use at site boundaries. Uses less water than water bowser Maintenance should be covered in the management system and procedures.	As above.
Water suppression with bowser	Using bowsers is a quick method of damping down large areas of the site with large water jets. This method could also be used on easy-to-clean, impermeable concrete surfaces.	Highly water intensive and more likely to minimise dust and particulates on the ground that is at risk of being re-suspended rather than already airborne dust and particulates. Very effective at dampening down haul roads and large surface areas. Can also come with hose attachments and other attachments to	A water bowser will be used at the site and on the surrounding estate roads.

Abatement Measure	Description / Effect	Overall consideration and implementation	Trigger for implementation / Justification
		increase its versatility. Can reduce the calorific value of the material which should be considered if sent for energy recovery/biomass type operations. Maintenance should be covered in the management system and procedures.	
Dust and particulate monitor with trigger alarm	Installation of a dust and particulate monitor with specified alarm trigger level can alert site staff when short-term particulate concentrations are elevated in order that site practices can be reviewed or application of mitigation measures increased.	Worthwhile installing as a real-time tracker of dust and particulate concentrations. Helpful to monitor environmental performance and also to track the effectiveness of improvements made at the site. It is important that the equipment is backed up by a suitable maintenance contract and initial capital costs, with maintenance is sub £10k for a suitable system. At multi-operator sites this kind of system can be used to demonstrate a specific site is not a source of dust and particulate pollution. ***Note** - The alarm trigger isn't set in permit conditions as a "compliance limit" but by the operator in the Dust Management Plan as an "action level" to alert the operator that they may be generating dust. The operator should stop once the alarm sounds and if they believe they are the source then they should modify their operations and report to the EA.*	Not necessary. Visual monitoring will be undertaken.

Abatement Measure	Description / Effect	Overall consideration and implementation	Trigger for implementation / Justification
		If the dust isn't coming from their operations then they should note it down and continue with their operations. Experience has shown us that a limit of less than 75 ug/m3 (over a 5 min average) for PM10 should be considered by operators initially and reviewed down after the system has been in place for some time. NOTE - Regulatory emphasis should NOT be placed on the exceedance but instead on the action the operator takes, if they are the source, to prevent a re-occurrence.	
Shaker grids	Similar to cattle grids, these are installed at a site entrance and exit. The movement of vehicles over the grids shakes dust and particulates from the wheels, thus removing them before vehicles enter the site.	Unlikely to be as effective and as thorough wheel washing. Work better for sites without impermeable surfaces where large amounts of mud need to be shaken off tyres and undercarriages. Must then be used in accordance with a wheel wash before exiting site onto the public highway. Maintenance should be covered in the management system and procedures.	Not necessary.
Water Cannons	Water cannons provide a means for delivery of powerful water streams from a water truck. With variable nozzles, the spray pattern can be controlled and varied between jet and fog. Typical water flows are up to 5000 litres per minute. Water cannons	Highly water intensive and more likely to minimise dust and particulates on the ground that is at risk of being re-suspended rather than already airborne dust and particulates. Covers a large area in a short amount of time.	Not necessary. Typically associated with construction waste and aggregate processing sites

Abatement Measure	Description / Effect	Overall consideration and implementation	Trigger for implementation / Justification
	are most often used for fire protection, mining operations, heavy machinery wash down, cleaning and dust and particulate abatement.	Can reduce the calorific value of the material which should be considered if sent for energy recovery/biomass type operations. Should be identified clearly in the site management system and implemented as appropriate measures. Produces large amounts of run-off that need to be managed to prevent pollution.	
Application of CMA / chemical suppressant	Diluted Calcium Magnesium Acetate (CMA) or other chemical based dust suppressant is regularly applied by spraying using a back-pack applicator for small areas or by road sweeper to cover larger areas. CMA acts as a suppressant with the aim of reducing dust and particulate re-suspension and hence ambient concentrations.	Trials indicate this can be an effective process. It shouldn't be applied during rain and once applied it needs to be re-applied regularly. Works best when applied to clean surfaces, and can also be applied to stockpiles to form a 'crust' and reduce wind-whipping. Price and efficacy vary depending on the brand selected. Maintenance should be covered in the management system and procedures.	Not applicable
Heavy Water	Heavy water is used to improve the compaction and stability and reduce dust and particulates on unsealed roads or areas of land. Ideally it is blended into the road construction material as the road is constructed, but where this is not possible it can be sprayed onto the top of the road.	Potentially useful but only for sites with large areas of unmade ground. Should be identified clearly in the site management system and implemented as appropriate measures.	Not applicable

Abatement Measure	Description / Effect	Overall consideration and implementation	Trigger for implementation / Justification
	Heavy water combines fast acting wetting agents with polymer binders, to allow penetration deep into the material and to 'agglomerate' the dust and particles together.		
Foam Suppression	The aggregate and mining industries frequently use foam suppression for the control of dust and particulate emissions, mixing the foam with broken material to increase efficiency. Foaming agents can be added to increase the efficiency of dust and particulate reduction. Foam suppression has seen increased attention in recent years and has previously been applied to waste transfer facilities where crushing of waste occurs. If using foam suppression to control dust and particulates from waste drops, the foam must be entrained within the waste material and as such must be injected prior to dropping the waste rather than at the bottom of the drop.	Potential to be useful at waste transfer sites. There is some evidence that this method is highly effective for controlling dusts and particulates on conveyor drops. Should be identified clearly in the site management system and implemented as appropriate measures.	Not applicable

4 REPORTING AND COMPLAINTS

4.1 The Site Manager has the overall responsibility for reporting and dealing with complaints.

4.2 The administration staff will all be responsible for handling complaints and recording on the correct form. All complaints must be referred to the Site Manager.

4.3 In this context, a complaint may be received directly from a resident, customer, SPA representative, or from a Regulator.

4.4 It is likely that complaints will be directed to SPA. If SPA receives a complaint, a record will be passed to the TCM and summarised in a Site Diary. The Complaint Form in Appendix A will be completed.

4.5 The TCM will review the activities that may have given rise to the complaint. Other actions will include:

- Review of site diary and check for any unusual regional weather events occurring during the day on which the compliant was made.
- Review site diary and establish what site activities were taking place at the time the complaint even occurred.
- Identify whether there were any other activities in the area taking place that could have generated dust.
- If it is established that the emissions were attributable to activities being undertaken at the site, as necessary review the relevant operational procedures and implement improvements and provide additional training to site.

4.6 The TCM will aim to provide feedback to each complainant within 48 hours of receiving the complaint.

4.7 If the site receives several substantiated complaints, the operator will engage the services of an Air Quality specialist to review the site operations and update this DEMP accordingly. A substantiated complaint is one where the TCM has visited the complainant and confirmed that dust or litter has left the site boundary and impacted their property (glass dust on cars, windows etc). The EA may also provide substantiated complaints.

4.8 If multiple complaints from different people are received on the same day, the TCM or site manager will visit the site and assess the conditions. The TCM or site manager will liaise with SPA and arrange for additional suppression to dampen stockpiles, if dust was being observed.

4.9 The waste is transferred from the bay to the barge using a clamshell grab. This encloses the waste as it is transferred. The TCM or Site Manager will observe the transfer and arrange for additional suppression if that is the cause.

4.10 Due to tide restrictions and the requirement to turnaround the barge, waste transfer cannot cease. The TCM will arrange for additional suppression to be applied during

inclement weather that may cause dust or litter generation during transfer. Once the transfer has been completed, the TCM or site manager will check the working area and arrange for the bay and surrounding land to be cleaned.

Engagement with the Community

4.11 The operator has existing presence in this estate. The immediate neighbours will be contacted, and direct dial telephone details provided for the TCM and main office number. Email contact details will also be provided.

4.12 SPA carries out engagement with all users in the Port and will contact SDL directly should any complaint be received.

Appendix A – Complaint Form

Incident/Complaint Details	
Nature of Incident / or Complaint	
Location	
Date and Time of Incident/Complaint	
Details of complainant (if possible)	
Plant and Machinery involved? (Make/Model, Vehicle Registration, Driver/Operator)	
Other Vehicles involved?	
Witnesses	
Investigation Details	
Investigation carried out by -	
Position -	
Date & time investigation carried out -	
Incident/Complaint Description -	
Cause of Incident / Complaint-	
Report to Senior Management and if necessary, the Environment Agency	
Feedback given to Staff -	
Feedback given to Complainant -	
Date feedback given -	

Review and Improve	
Improvements needed to prevent a reoccurrence -	
Proposed date for completion of the improvements -	
Actual date for completion -	
Does the EMS need to be updated? -	
Date that the EMS was updated -	

Closure	
SDL manager review date	
SDL manager signature to confirm no further action required	