

SHAW HAULAGE LIMITED

ENVIRONMENTAL MANAGEMENT SYSTEM

**Dust & Emissions Management Plan (DEMP)
Reference: EMS-OP-02**

Version 1 Dated 30 December 2022

**Queenborough Business Park
Queenborough
Isle of Sheppey
ME11 5DY**

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Document Reference: EMS OP 02	Issue Number: 1	Issue Date: 30.12.2022

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1. Introduction

1.1 Purpose

The purpose of these procedures is to guide staff and contractors in the safe conduct of their duties in a manner which controls the environmental impacts of the company's operations, with specific reference to dust management.

The site can meet the Standard Rules Permit SR2009 No.6 Inert and Excavation Waste Transfer Station with Treatment (<250,000tpa), except for the proximity to European Sites and Sites of Special Scientific Interest (SSSI). It would meet all other criteria.

The site is 360m from the Medway Estuary & Marshes, which are a designated Ramsar site, SSSI and Special Protection Area (SPA). The distance set out in the Standard Rules permit is 500m.

The site is not within an Air Quality Management Area.

The Standard Rules permit contains condition 3.1 which states:

- 3.1.1 Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this rule if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.
- 3.1.2 The operator shall:
- (a) maintain and implement an emissions management plan;
 - (b) if notified by the Environment Agency that the activities are giving rise to pollution, submit to the Environment Agency for approval within the period specified, a revised emissions management plan;
 - (c) implement any approved revised emissions management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.
- 3.1.3 All liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.

This Dust Management Plan has been completed to support this application for a bespoke permit. With reference to the Environment Agency guidance, it states *"If you are applying for a bespoke permit but most of your activities are covered by standard rules, you only need to do a risk assessment for the activities or risks that are not covered by the generic risk assessment for those standard rules."*

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All of the activities will meet the generic risk assessment for the standard rules. The only risk not covered by the generic risk assessment is the risk to the Medway Estuary & Marshes.

Kent County Council granted planning permission for the use of the site as a Materials Recycling Facility, including the erection of an operations centre and maintenance workshop building and parking for 26 HGVs. Planning permission was granted on 20 November 2020.

The site is currently used as a haulage depot for Shaw Haulage Limited.

This version has been prepared to support an application for an Environmental Permit. For completeness, it covers all site activities and risks.

1.2 The Operator

Shaw Haulage has been operating since 2013. The company now has an Operating Licence for 20 HGVs. The Operating Centre is at the Queenborough Site.

Planning permission was granted by Kent County Council on 20 November 2020 for the use of the site as a Materials Recycling Facility including the erection of an operations centre and maintenance workshop building and parking for 26 HGVs.

Shaw Haulage operate a fleet of HGVs used in the collection and transportation of construction, demolition and excavation waste (CDE).

The applicant will import mainly demolition waste, i.e. concrete, bricks, hardcore, to the site for processing. The wastes will be crushed to produce recycled aggregates. The site may also store primary aggregates for direct supply to the construction industry.

The site is the operational base for the fleet of the HGVs and provides the Head Office for the company. The Transport Manager and Accounts team are based at the site.

1.3 Site Location

The procedures relate to the permitted activities at Queenborough Business Park, Queenborough, Isle of Sheppey ME11 5DY.

The site is in an industrial estate.

The site is in the Borough of Swale within the County of Kent.

The site is not within an Air Quality Management Area.

With reference to UK Air ¹, there are no monitoring stations on the Isle of Sheppey.

¹ <https://uk-air.defra.gov.uk/interactive-map>

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There is an Automatic Urban and Rural station at Rochester Stoke, some 9km north west of the site.

1.4 Scope

These Operational Procedures cover:

- Physical Treatment of non-hazardous waste

The procedures relate to the permitted activities at Queenborough Business Park, Queenborough, Isle of Sheppey, ME11 5DY.

The site can meet the SR2009 No.6 Inert and Excavation Waste Transfer Station with Treatment, except for the proximity to a European site. The site will be used to receive waste concrete, hardcore and bricks. The waste will be crushed to produce certified products for the construction industry. Waste soils may be stored at the site pending transfer off site.

1.5 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.

Cross referencing to specific aspects in the EMS has been made in this report.

All documents will be kept in the site office.

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2 Operations

2.1 Waste Deliveries to Site

At the time of booking, the customer will be advised of the wastes that are permitted to be deposited at the site. Shaw Haulage provide a specific service for moving waste concrete, bricks, rubble and soils. They will be advised that wastes including asbestos, hazardous waste, are not permitted at the site.

The vehicles are either grab loaders or 8-wheeled trucks. The former requires the driver to use the grab to load the waste at the source. This can therefore be visually checked at the point of collection. For the 8-wheeled trucks, the driver will visually inspect the waste before it is loaded onto the vehicle.

All vehicles meet Euro 6 emission rating.

All loads in open 8-wheeled trucks will be sheeted.

2.2 On Site Waste Acceptance

The driver will arrive at the site and use the weighbridge. The Waste Transfer Note will be handed and completed by the site office.

Once instructed to unload, the vehicle will reverse into the unloading area. At this time, the machine operator will check the load and observe if any non-permitted waste has been deposited. As the driver has some control at the loading stage, it is unlikely that non-compliant waste will be received.

Any incidents of non-conformance will be recorded in the Non-Permitted Waste Form EMS-FR-01 and corrective action taken.

2.3 Overview of Waste Processing and Dust Controls

The site layout is shown on Drawing No. SHL-LAY-01. A process flow diagram is provided in Figure 1. The majority of the waste to be accepted at the site will be concrete, bricks and soil. The waste codes set out in Table 1 provide the main list of waste to be accepted and its destination on site.

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Table 1 –Wastes Typically Accepted at the Site

EWC Code	Description	Comments
17 01 01	Concrete	Crushed
17 01 02	Bricks	Crushed
17 01 03	Tiles and ceramics	Crushed
17 01 07	Mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06	Crushed
17 03 02	bituminous mixtures other than those mentioned in 17 03 01	Stored in bay
17 05 04	Soils and Stones	Stored in bay
20 02 02	Soils and Stones	Stored in bay

The site has been designed with storage bays and perimeter walls. The site comprises of hardstanding.

The concrete and bricks will be stockpiled and when sufficient quantities are stored, the waste will be crushed using a Rubble Master 90.

The crushing process will produce two materials:

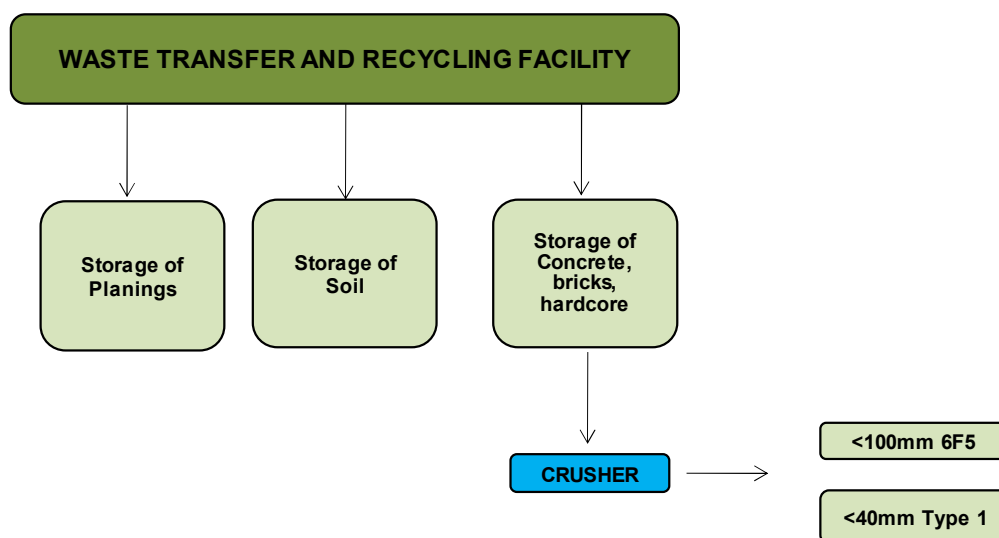
<40mm	Type 1
<100mm	6F5

This material will be produced in accordance with a Factory Protocol to achieve End of Waste status and comply with the Quality Protocol.

Once the material has been produced, it will either be transferred using a loading shovel/excavator to the storage bays, or directly loaded into a vehicle for off-site transfer. Transfer to the storage bays will be necessary to manage processing capacity but will only be used if required to avoid double handling.

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Figure 1 – Process Flow Diagram



2.3.1 Waste Storage and Quantities

The annual permitted throughput of the facility will be 250,000 tonnes.

The process capacity of the crusher is 200 tonnes per hour. It is proposed to crush on a campaign basis, thus achieving a rate of 1000 tonnes per week.

The maximum storage limits are set out in Table 2.

The specified waste management operations include waste disposal and waste recovery operations listed Annex IIA and IIB of The Waste Framework Directive 2008/98/EC and are:

- R3: Recycling or reclamation of organic substances.
- R5: Recycling or reclamation of other inorganic materials.
- R13: Storage of waste pending recovery

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Table 2 Storage Limits (Cross Refer to Drawing No SHL-PRO-01)

Waste Type	Storage Area	Max. Pile Height	Max. Volume
Reception Area	15m x 15m 225m ²	4m	600m ³
Metal (removed from crusher)	5m x 5m 25m ²	4m	70m ³
<40mm (pending certification)	5m x 5m 25m ²	4m	70m ³
<100mm (pending certification)	10m x 10m 100m ²	4m	250m ³
Aggregate Bay A	10m x 10m 100m ²	4m	250m ³
Aggregate Bay B	10m x 10m 100m ²	4m	250m ³
Aggregate Bay C	10m x 10m 100m ²	4m	250m ³

2.3.2 Hours of Operation

The operational hours for the site are:

Monday to Friday 0700-18.00
Saturday 07.00-14.00
No operations on Sunday or Bank Holidays

The crushing operations will take place during the following hours:

Monday to Friday 0900-15.00
No operations on Saturday, Sunday or Bank Holidays

The site will be locked when not manned, with out of hours security provided.

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2.3.3 Staff

This company employ 34 staff as follows:

Director (EPOC)	1
Commercial Manager (WAMITAB)	1
Transport Manager	2
Accounts Manager	1
Accounts/Admin	2
Drivers	21
Machine operators	5
Mechanics	1

Most staff will be based at the Queenborough site. The site is currently used as the company Head Office and Transport Depot.

2.3.4 Mobile Plant and Equipment

The site will use the following mobile plant and equipment.

Rubble Master 90	x1
Loading Shovel	x1

Nitrogen Dioxide gas is a by-product of internal combustion engines and the site uses several items of plant with internal combustion engines. Table 3 lists the type, mobile and emission ratings for the mobile plant and equipment used on site:

Table 3 – List of Plant

Description	Make	Model	Emission Rating
Loading Shovel	Komatsu	WA380	EU Stage IIIB
Crusher	Rubble Master	90	Stage IIIA

The company has a policy of replacing old machinery with modern machinery.

Whilst the concrete crusher is mobile plant, it will be operated in a fixed position as shown on the layout plan.

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

All road and mobile plant will be complaint with Euro 6 emissions standard.

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The site has a Planned Preventative Maintenance Schedule (PPMS) for each item of machinery and all road vehicles. A Transport Manager is responsible for this.

Prior to operations commencing, a PPMS will be created for the site based plant and machinery. This will detail the daily, weekly, monthly and annual checks required to prevent any maintenance issues. The operator has in-house mechanics trained to carry out the servicing requirements.

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3. Dust and Particulate Management

3.1 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. Staff training is set out in EMS-OP-01. All staff will be trained to a standard which enables them to perform the responsibilities. The TCM is responsible for delivering training and maintaining records. Training is reviewed on an annual basis. The site office has a dedicate training room to deliver all training and tool box talks.

A record of staff training will be kept for each staff member which includes inductions to new processes and procedures as needed. EMS-FR-03.

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.

3.2 Sources and Control of Fugitive Dust/Particulate Emissions

The following are potential sources of dust emissions:

- Vehicles entering and/or leaving the site with mud or debris on their wheels
- Waste unloading (Unloading Area)
- Loading process plant
- Crushing
- Moving materials
- Particulate emissions from the exhaust of vehicles and plant on site.

It is also important to identify other potential sources of dust emissions in the locality. There are several construction projects in the local area, that are all potential sources of dust.

Environment Agency Technical Guidance Note TGN M172 (TGN M17) discusses the pathways for the transport of dust in the context of waste facilities and explains the differentiation between the terms dust and particulate matter as follows:

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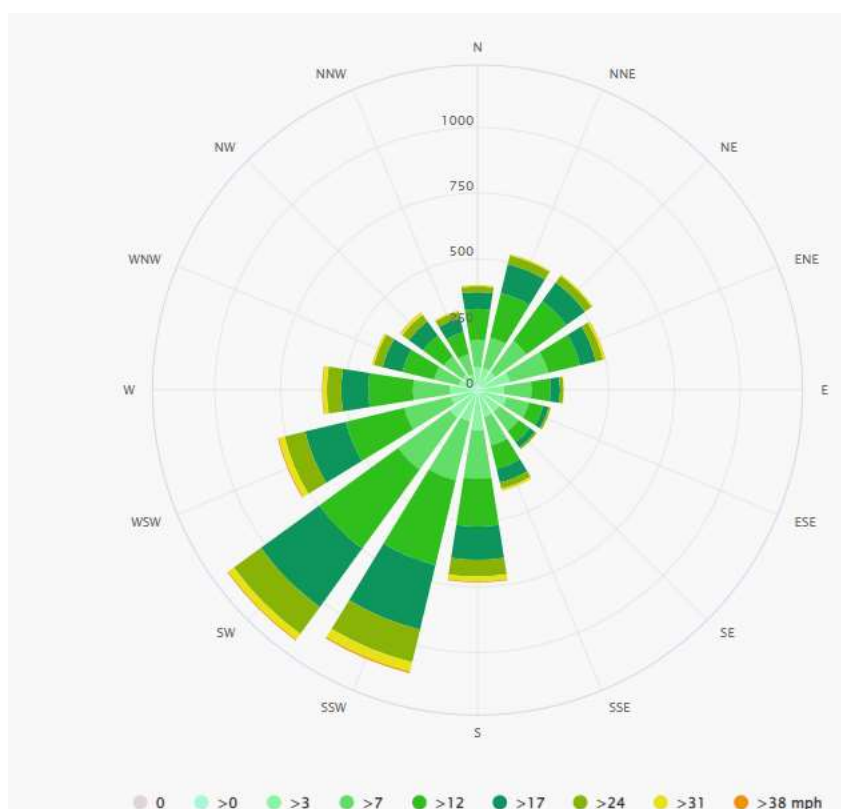
“The terms dust and PM are used fairly interchangeably, although in some contexts one term tends to be used in preference to the other, as summarised below.

The dust will be generated by an emission source on the site and released to the air, for example by the tipping of waste from a lorry onto a stockpile. Once the dust is in the air it is termed suspended PM and will spread out from the source and be carried on the wind away from the site.”

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 the Isle of Sheppey.

Figure 2 - Wind Rose Data²



Particle size is the key parameter when considering the transport of particulate matter in air. Coarse particles have much faster settling rates than finer particles and will therefore settle out as deposited dust generally close to the source. The finer particles may remain airborne for longer and travel further from the source.

² https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/isle-of-sheppey_united-kingdom_2638038

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Based on information published by DETR3 large particles (>30µm) mostly deposit within 100m of the source, intermediate-sized particles (10µm to 30µm) are likely to travel up to 200m to 500m and smaller particles (<10µm) can travel up to 1km from the source, although very small particles can travel much further. TGN M17 states that:

'PM10 emissions from industrial combustion processes and road transport are considered to contain more fine material (i.e. PM2.5) than, for example, mechanically-generated particulates from quarries and construction sites'

'Waste management operations that involve mechanical generation of PM rather than combustion, are also likely to release predominantly coarse particles.'

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

Figure 3 shows the site and broad location of the main receptors within 1km. Table 4 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.

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

Type of Receptor	Sensitivity
Residential, schools, hospitals, nursing homes, Statutory Designations (SSSI, SPA, SAC)	High
Industrial premises, recreational grounds, Non Statutory Designations (Local Wildlife Sites)	Medium
Roads, Industrial premises (waste)	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 3 - Site Setting and Receptors (The permitted site is shown with a green boundary). Blue shows 1km radius from centre point of site.

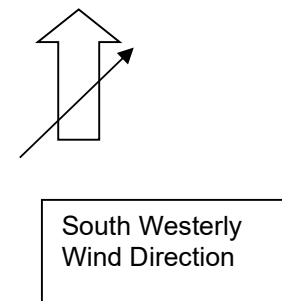
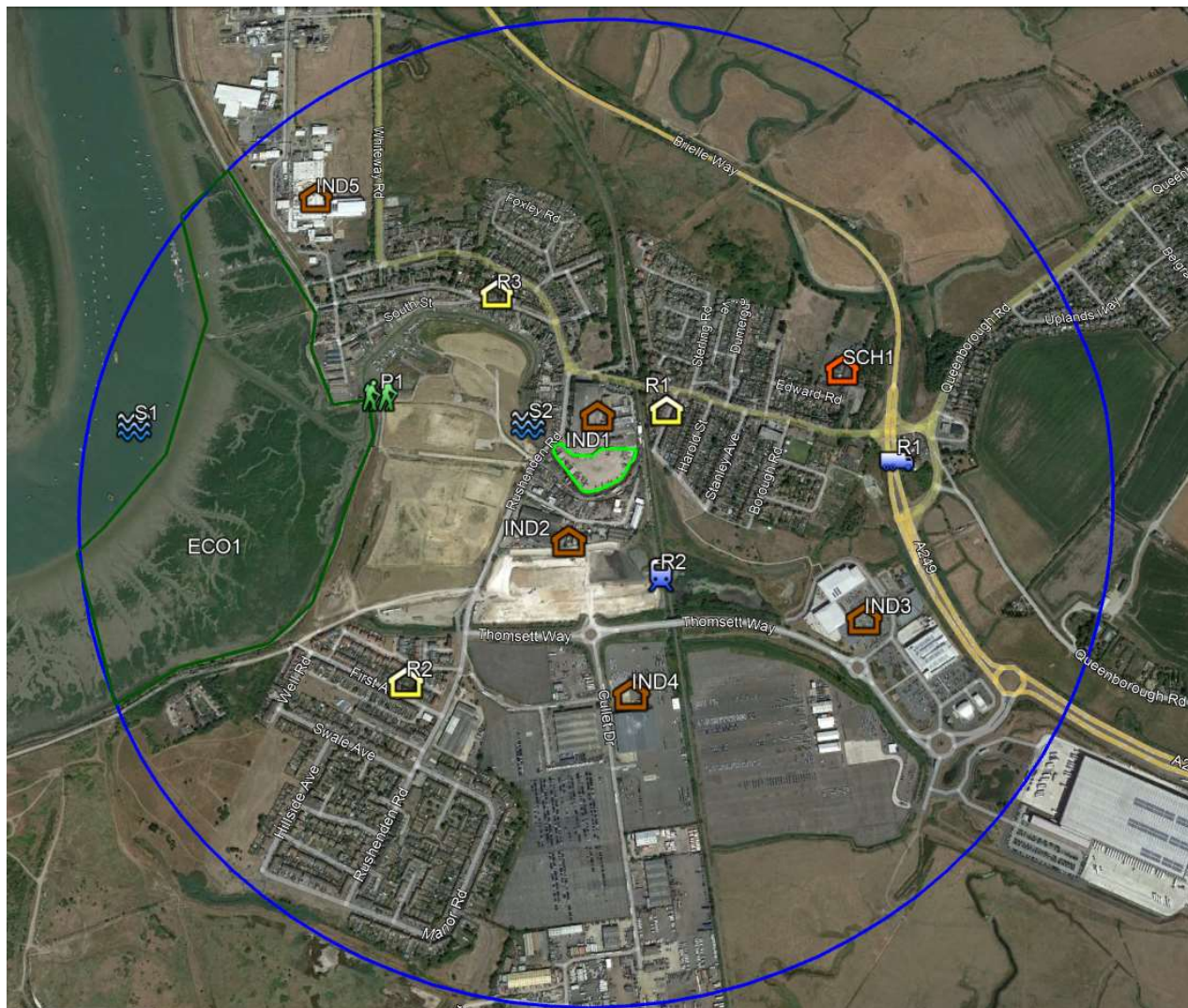


Table 4 – Receptors

Receptor	Legend	Type	Sensitivity	Distance and Direction from Permitted site
Olympic Glass Products	IND 1	Industrial/Warehouse	Low	20m North
Logistics, garages	IND 2	Commercial/Retail	Low	10m South
Retail Park Thomsett Way	IND 3	Industrial/Warehouse	Low	400m South East
Cullet Drive several businesses	IND 4	Industrial/Warehouse	Low	300m South
Phr	IND 5	Industrial/Warehouse	Low	640m North West
The Swale	S1	Surface Water	Medium	735m West
Queenborough Creek	S2	Surface Water	Medium	<10m
Footpath 0206	P1	Public right of way	Medium	60m South West
Gordon Avenue	R1	Residential	High	50m North East
Flanagan Avenue	R2	Residential	High	400m South West
High Street	R3	Residential	High	160m North
Queenborough School and Nursery	SCH1	Education	High	380m North East
Medway Estuary and Marshes SSSI, Ramsar and SPA	ECO1	Ecology	High	360m West
Railway	R2	Railway	Low	20m East
A249	R1	Road	Low	490m East

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3.3 Dust Control Measures

The site has been designed to contain operations in distinct parts of the site.

The waste unloading area and crushing operations will take place in the central part of the site, behind a barrier.

There will be a 4m high perimeter concrete wall around the site. Aggregate bays will be formed from this along the eastern side of the site.

The incoming waste pile will be located next to the crusher. The waste will be directly loaded into the crusher, and two product stockpiles will be generated. Where practicable, the products will be directly loaded onto vehicles for off-site removal. If necessary, the products will be stored in the aggregate bays.

The following procedures will be implemented to prevent emissions to air from waste handling.

- Vehicles to be sheeted.
- Crushing to take place behind a 6m high barrier.
- Crushing to take place only 1-2 days per week. The days can be selected based on weather conditions.
- Vehicles leaving the site will be checked and if necessary, a hose and brush will be used to clean the wheels.
- Speed restriction of 5mph on site limit dust arising from waste vehicles and mobile plant.
- A banksman will be used to direct traffic and prevent vehicles from tracking through deposited waste.
- As part of the site daily checks, the Site Manager will check the entire site for evidence of any debris and arrange cleaning as required.
- A road sweeper will be used to weekly or daily if required to clear the access road.
- Mobile plant will be cleaned daily if required, or at least weekly.
- The site has available the use of mobile dust cannons and a water bowser to keep stockpiles and surfaces damp to prevent airborne dust emissions.
- Dust suppression fitted to concrete crusher
- There are a number of hoses positioned around the site which can be used to target stockpiles, site surface and specific loading activities.
- A windsock will be permanently positioned on the site office roof. This provides a quick visual aid of the prevailing wind conditions.
- Weather forecast review. The TCM will check the weekly forecast at the start of each working week. If the Met Office issues a weather warning for high wind, the TCM will arrange for the crushing operations to cease during that time. Waste manoeuvring will also be curtailed. If the forecast is for moderate wind, the TCM will decide on the day to determine what activities can take place.

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During this time, additional control using the water bowser and dust cannon will be implemented.

- If the Met Office issue a weather warning for drought conditions, the TCM will arrange for additional water storage capacity using IBCs. Each IBC can hold 1,000 litres of water.
- Rain water harvesting tanks will be used to collect and store rain water for use during drier weather conditions.
- Drop heights from plant will be reduced to minimise dust emissions.
- Stockpiles will be dampened.
- Stockpiles to be kept 0.5m below barrier wall (either 3.5m or 5.5m depending on the wall).

3.4 Visual Dust Monitoring

The site management and site operatives will make visual inspections of dust emissions around the entire site and perimeter throughout the day. The monitoring locations are shown on the Site Layout plan. Additional monitoring may be carried out during times of dry/windy weather conditions or should trained operatives observe significant levels of dust. The monitoring will be carried out at intervals while the site is operational, should it be observed that dust is being emitted from the site, notes will be made describing the amount, direction and source of the dust.

The TCM will review all feedback from the visual monitoring and take the necessary action to mitigate the issue and ensure it doesn't happen again. Depending on where and if dust is detected, site management and operatives will act immediately by either dousing the problematic area and initiating the mobile suppression equipment.

As set out above, the TCM will obtain prior notifications from the Met Office in advance of problematic weather conditions including wind speed and direction, droughts etc. to see whether the dust suppression techniques need to be increased to reduce the likelihood of complaints.

Out of hours monitoring will not be regularly required as it is deemed that the processing and loading of the material is likely to give rise to the highest levels of dust emissions i.e. from use of the treatment plant. However, should it become apparent that dust emissions are generated out-of-hours, site management will decide on whether additional out of hours monitoring is required (based on predicted wind speeds, observed success of crusting agents etc.) or additional control measures are required.

Such control measures could include but not limited to; netting on top of boundary walls/fences, increase in height of walls/enclosure, reduction of stockpile size, cover stockpiles overnight.

The results of monitoring exercises and any remedial action taken will be entered into the site's diary or log book which will be available for the EA to inspect upon request.

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The name of the inspector will be stated in the site's diary / inspection form for each day of operation.

In the event of complaints being received, the complaint procedure will be implemented with form EMS-FR-02.

3.5 Weather conditions

The TCM and site management will check the forecast at the beginning of each week to check for the following weather conditions which could cause a potential on or off-site dust complaint:

- High winds >30mph
- Dust escaping beyond the site boundary
- Droughts or periods of hot weather exceeding 3 major dry days which could lead to water shortages, hosepipe bans and excessive dust.

This will also be used to check weather warnings for named storms.

During high winds the following actions will be implemented.

- There will be no treatment of any waste during conditions of high winds.
- Stockpiles will be reduced to prevent the material escaping beyond the site boundary.
- In the event of extreme winds, the site will deploy the above measures and may be forced to close operations until conditions have improved which will also include contacting the EA Local Officer.
- Following such an event, the site infrastructure will be checked for damage, with corrective repairs carried out as necessary.

Additional measures may be used when the prevailing wind is towards to the ecological designation (the Medway Estuary). The estuary is west of the site, which is not downwind of the prevailing south westerly wind. During storm conditions which could release dust towards the direction of the estuary, the TCM may cease treatment operations or implement further control measures. The estuary is separated from the site by a large construction site. The likelihood of dust emissions from site activities impacting the estuary is low.

During drought conditions (warm, dry weather), the following actions will be implemented.

- In extreme cases such as a hosepipe ban or water shortage, the site will ensure there is additional water available i.e. tanks which can be used for filling the dust cannons to ensure suppression techniques can still function. Further cannons or bowsers may be hired in to cover the dry period.
- Where dust is becoming a major concern then the operator will stop processing the material and cover stockpiles using tarpaulin until conditions or dust suppression techniques are considered effective.

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3.6 Operational Failure

The TCM will be contacted by staff in the event of any operational failure such as the breakdown of plant, suppression systems or equipment and will decide whether operations are to continue or be suspended prior to corrective action being taken. Serious operational failures, which result in the closure of the site, will be recorded in the site diary.

The operator has on-site mechanics available to assist with any breakdowns. The operator also has contacts with hire companies to assist with temporary machinery hire whilst plant is being repaired.

Tables 5 and 6 provide the risk assessment for dust and the remediation/control measures.

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Table 5: Source-Pathway-Receptor Routes

Source	Pathway	Receptor	Type of impact	Control Measures
Unloading and processing waste	Tracking dust on wheels and vehicles	Local Roads	Visual soiling, also consequent resuspension as airborne particulates	Vehicles will be checked prior to leaving the site and will be cleaned if mud/debris is noticeable on the wheels or chassis. Banksmen will be responsible for this process. A banksman will be used to direct HGVs to minimise the likelihood of track mud and debris on the wheels. A hose and brush will be used to clean the wheels and clean the yard. A road sweeper will be deployed as necessary to clean the access road.
	Atmospheric dispersion	Nearby industrial premises (workers and pedestrians).	Visual soiling and airborne particulates	Vehicles will only be unsheeted when ready to discharge. The waste will be unloaded and treated in dedicated areas in the site. Drop heights will be kept to a minimum and dust suppression used to minimise emissions.
	Atmospheric dispersion	Residential properties	Visual soiling and airborne particulates	As above, but the site layout has been designed to minimise risk. The treatment will take place in the central part of the site behind a 6m high barrier. There will also be a perimeter 4m high wall.
	Atmospheric dispersion	Designated Ecological Sites	Visual soiling, smothering, suspended solids in water.	As above, but the ecological designation is separated from the site by a large construction site. Most dust deposition will occur within 100m of the source. The receptor is over 300m from the site. Dust is unlikely to reach this receptor.
Debris	Falling off lorries	Local Roads	Visual soiling, and resuspension as airborne particulates	All vehicles delivery and collecting waste will be sheeted. There is 70m of internal road before public highway. A hose and brush will be used to clean the wheels and clean the yard. A road sweeper will be deployed as necessary to clean the access road.
Vehicle exhaust emissions	Atmospheric dispersion	All	Airborne particulates	Regulatory controls and best-practice measures to minimise source strength
Non road going machinery exhaust emissions	Atmospheric dispersion	Local Environment	Airborne particulates	Regulatory controls and best-practice measures to minimise source strength.

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Table 6 - Measures used on site to control Dust/Particulates

Abatement Measure	Description / Effect	Overall consideration and implementation
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.	This is an expensive option for the waste being managed. It is not often cost effective to provide a building for this waste stream. Solid barriers will be provided with control measures.
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 system prior to discharge to atmosphere. This method is more frequently applied for odour control.	Not applicable

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Abatement Measure	Description / Effect	Overall consideration and implementation
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.	No applicable
Site / process layout in relation to receptors	Locating particulate emitting activities at a greater distance and downwind from receptors.	The site has been designed to locate the treatment activity within the central part of the site, maximising the distance between this source and the nearest receptors. Perimeter walls will also be provided.

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Abatement Measure	Description / Effect	Overall consideration and implementation
Site speed limit, 'no idling' policy and minimisation of vehicle movements on site	Reducing vehicle movements and idling should reduce emissions from vehicles. Enforcement of a speed limit may reduce re-suspension of particulates by vehicle wheels.	The site speed restrictions will be 5mph for all vehicles and mobile plant. Anti-idling protocol in place. Banksmen will be used to ensure the efficient flow of traffic, minimise waiting times and reduce unnecessary vehicle manoeuvring. Site will be used by Shaw Haulage only. The transport manager has full control of the vehicles and therefore all deliveries will be pre-arranged.
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.	The process equipment will be set at defined heights. The loading operator will reduce the height of the drop when moving waste and products.
Sheeting of vehicles	Prevents the escape of debris, dust and particulates from vehicles as they travel.	All incoming loads will be unsheeted once ready to discharge. All waste being removed will be in sheeted vehicles. There is 70m of an internal concrete road before vehicles enter the public highway.
Good Housekeeping	Having a consistent, regular housekeeping regime will ensure the site is regularly checked and issued remedied to prevent and remove dust and particulate build-up	As part of the daily Site Checks, the TCM checks the site, but all staff are trained to monitor for any debris or dust on the site and instigate cleaning. On a weekly basis (typically on Saturday), a detailed clean will take place which will include the equipment. A hose and brush will be used to clean the yard. A road sweeper will be deployed as necessary to clean the access road.

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Hosing of vehicles on exit	May remove some dirt, dust and particulates from the lower parts of vehicles.	All vehicles will be checked when leaving the site to ensure vehicle wheels are cleared. All staff will be trained to check on the vehicles. A hose and brush will be used to clean the wheels. All road vehicles will be washed weekly.
Install a 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	This is not currently proposed. There will be a hose and brush provided to clean wheels.
Ceasing operation during high winds and/or prevailing wind direction	Mobilisation of dust and particulates is likely to be greater during periods of strong winds and hence ceasing operation at these times may reduce peak pollution events.	TCM will review weather forecast at the start of each working week. If the Met Office issue a weather warning, the TCM will decide the action for that particular day(s). This could include ceasing all treatment operations, or increased dust suppression.
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	There is no requirement for a concrete surface at this stage. If considered necessary, the operator may deploy a road sweeper to clean the access road. Daily checks as part of the EMS.

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	on site haul roads. This should reduce the amount of dust and particulate generated at ground level by vehicles and site activities.	
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.	Storage height limits are set out in this Management Plan. The process equipment will be set at defined heights. The loading operator will reduce the height of the drop when placing waste into the equipment or when loading HGVs.
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.	TCM will review weather forecast at the start of each working week. If the Met Office issue a weather warning, the TCM will decide the action for that particular day(s). This could include ceasing all treatment operations, or increased dust suppression.
Use of wheel wash	Vehicles would exit the site via a wheel wash.	This is currently not used at the site. It is considered unnecessary given the controls in place and the distance that vehicles travel before reaching the highway.

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Abatement Measure	Description / Effect	Overall consideration and implementation
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.	It is proposed to operate the crusher behind a wall that will provide at 6m protection. Additional netting could be provided if required.
On-site sweeping	Sweeping could be effective in managing larger debris, dust and 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.	The site will be cleaned daily. A water bowser will be used for cleaning the yard. A road sweeper will be deployed as necessary to clean the entrance and access road.
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.	It is proposed to operate the crusher behind a wall that will provide at 6m protection. The perimeter wall will be 4m high. If necessary, micro netting can be attached to either wall to provide additional containment. The need for this will be monitored during the first 12 months of operations. If there are complaints regarding dust at any

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		time, or dust is visible observed to leave the site, the TCM will implement this action sooner.
Water suppression with hoses & water jets	Damping down of site areas using hoses can reduce dust and particulate re-suspension and may assist in the cleaning of the site if combined with sweeping.	Hoses will be provided around the site to provide targeted suppression during loading, unloading, treatment and transfer. In addition, a water bowser and dust cannons will be available. The water supply will be used to dampen stockpiles and the working area.
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.	A fully installed dust suppression system may be installed in the event that the controls described are not effective.
Water suppression with bowser	Using bowzers 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.	The site will use a water bowser to keep the site clean. The water bowser is permanently based at the site. At the end of each working day during dry weather conditions, the bowser will be deployed to dampen stockpiles. It will be filled with water at the end of the day in preparation for use the next working day.
Shaker grids	Similar to cattle grids, these are installed at a site entrance and	Wheel washing techniques provided.

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	exit. The movement of vehicles over the grids shakes dust and particulates from the wheels, thus removing them before vehicles enter the site.	
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 are most often used for fire protection, mining operations, heavy machinery wash down, cleaning and dust and particulate abatement.	Water cannons are usually deployed on sites that store materials outside, for example construction waste and aggregates. Cannons will be available if required.
Screening of buildings / reducing large apertures using plastic strips	Installing plastic strips to cover entrances/exits to buildings may reduce emissions of dust and particulates dispersing through doorways.	Not applicable.

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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.	Typically applied to stockpiles stored outside. This will be considered if the prescribed dust control measures are not effective for out of hours.
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. 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.	There are no proposals to utilise heavy water at the site.
Foam Suppression	The aggregate and mining industries frequently use foam suppression for	There are no proposals to utilise foam suppression at the site.

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	<p>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.</p>	

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4. Reporting and Complaints Response

The Site Manager has the overall responsibility for this procedure.

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.

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

When the site receives a complaint, a record is summarised in the Site Diary. Full details will be provided on the complaints form, EMS-FR-02, see Appendix A.

All staff based in the office will be trained on recording complaints and to make sure they notify the TCM immediately.

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 a unusual regional weather events occurring during the day on which the complaint was made, for example Saharan dust storms.
- Review site diary and establish what site activities were taking place at the time the complaint even occurred.
- Review waste types accepted that day.
- Identify whether there were any other activities in the area taking place that could have generated dust e.g. road works or construction works.
- 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.
- The action taken will be reported to the Environment Agency.

The Site Manager will report the findings to the complainant and implement appropriate corrective action in accordance with a specific management plan or the Operational Procedures.

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

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. Interim measures will be sought to improve conditions until a more permanent solution has been assessed and implemented. If during the interim period, complaints continue to be received, the operator will cease operations until measures have been implemented to prevent dust emissions.

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4.1 Engagement with the Community

The immediate neighbours will be contacted, and direct dial telephone details provided for the TCM and main officer number. Email contact details will also be provided.

Appendix A - Complaint Form

Customer Details	
Customer Name -	
Address –	
Postcode -	
Customer Contact Details -	
Tel -	
Email -	
Date -	
Complaint Ref Number -	
Complaint Details -	
Investigation Details	
Investigation carried out by -	
Position -	
Date & time investigation carried out -	
Weather conditions -	
Wind direction and speed -	
Investigation findings -	
Feedback given to Environment Agency and/or local authority -	
Date feedback given -	
Feedback given to public -	
Date feedback given -	
Review and Improve	
Improvements needed to prevent a reoccurrence -	
Proposed date for completion of the improvements -	
Actual date for completion -	
If different insert reason for delay -	
Does the dust management plan need to be updated -	
Date that the dust management plan was updated -	
Closure	
Site manager review date	
Site manager signature to confirm no further action required	