



STUART HAMILTON PLANT LIMITED

RIPON STREET DEPOT

SHEFFIELD S9 3NE

DUST & EMISSION MANAGEMENT PLAN (DEMP)

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Issue and Revision Record

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1. Introduction

The site is located on Ripon Street, Sheffield and is owned and operated by Hamilton Plant Limited. The site is located in an urban industrial area has always been used for industrial purposes, it was previously used as a railway yard.

Currently the site is operated as an inert waste transfer / recycling facility. Waste material such as soil and stones, concrete, bricks and rubble are accepted onto the site for storage, sorting and treatment to produce soil / soil substitutes and aggregates that can be re-used for construction purposes.

The local authority for the site is Sheffield City Council and they have no specific conditions in the planning permission (reference 20/01144/FUL EMS Appendix 14) for special infrastructure or controls to prevent dust and other emissions.

The site is located in an Air Quality Management Zone. Activities on site include physical processing (crushing and/or screening) of waste materials and associated vehicle operations on the site. If there were no environmental control / abatement systems, there would be the potential for the site activities to produce atmospheric emissions. The potential emissions and sources of emissions are;

- Dust from physical processing, open air storage and movement of vehicles and plant around on the site. This is the main emission that will be considered in more depth.
- PM10 and PM2.5 emissions associated with physical processing, open air storage and movement of vehicles and plant around on the site.
- NO2 from exhaust emissions of mobile plant and vehicles.

This document has been produced to compliment the sites Environmental management System and act as a vehicle to adhere to the sites Bespoke Environmental Permit as requested by the Environment Agency.

The purpose of this DEMP is to identify potential activities which may cause dust and air emissions and highlight control and mitigation measures to ensure pollution outside of the site boundary is prevented and human health and the environment is protected.

This DEMP is available in electronic format in the site office and can be made available on request to stakeholders such as receptors, regulators, HPL staff and sub-contractors.

1.1 Sensitive Receptors

There are several receptors located in close proximity to the site as shown in Figure 1.1, which may be affected by dust and other emissions from the site.

Industrial land uses exist adjacent to the northern boundary including:

- JDH Hydraulics (ram manufacturers)
- Allot Steelworks x S&H Motors Transport, Haulage and Storage
- Worthing Road Transport Services
- PGS Supplies (jute, canvas and PVC goods)
- BCCS Asbestos removals

The western end of the site adjoins the adjacent Veolia Environmental Services depot.

The northern part of the site at the location where Woodbourne Hill adjoins the site, the following industrial land uses are present:

- Special Steels
- Spray Centre UK (Paint Suppliers)

Sensitive receptors are listed below in Table 1.1:

Table 1.1 Sensitive Receptors

Boundary	Closest property	Approximate distance to Woodbourne Hill site boundary (m)
South	Railway Line	5
South West	Parkway Central Shopping	300
South	Residential properties on Cricket Inn Road	347
North East	Sheffield Hallam University	493
South	Surgimed Healthcare	738
North West	Sheffield and Tinsley Canal	200
North West	Salmon Pastures (Local nature Reserve)	205
North West	River Don	205

The above are considered sensitive receptors due to occupants being more susceptible to the adverse effects of exposure to high levels of dust, particulates and emissions. Receptors to the south of the site may not be considered as sensitive receptors as actual likelihood of being affected by dust is low. This is due to the A57 running parallel to the southern boundary at a distance of 187m. The A57 will give rise to significantly more emissions and particulates than the site. The site has some trees located along the northern boundary which will provide a visual barrier and also provide some attenuation for dust and emissions.

Figure 1.1 Below shows the location of the site (S9 3NE) and the sensitive receptors located within a 2km radius from the site.

Figure 1.2 shows a wind rose for the average wind direction and strength generated for the Sheffield area. This has been produced as a requirement of the DEMP and shows the prevailing wind direction as south west. This information will support decisions regarding placement of monitoring equipment.

Table 1.2 shows other likely sources of dust and emissions from the surrounding area.

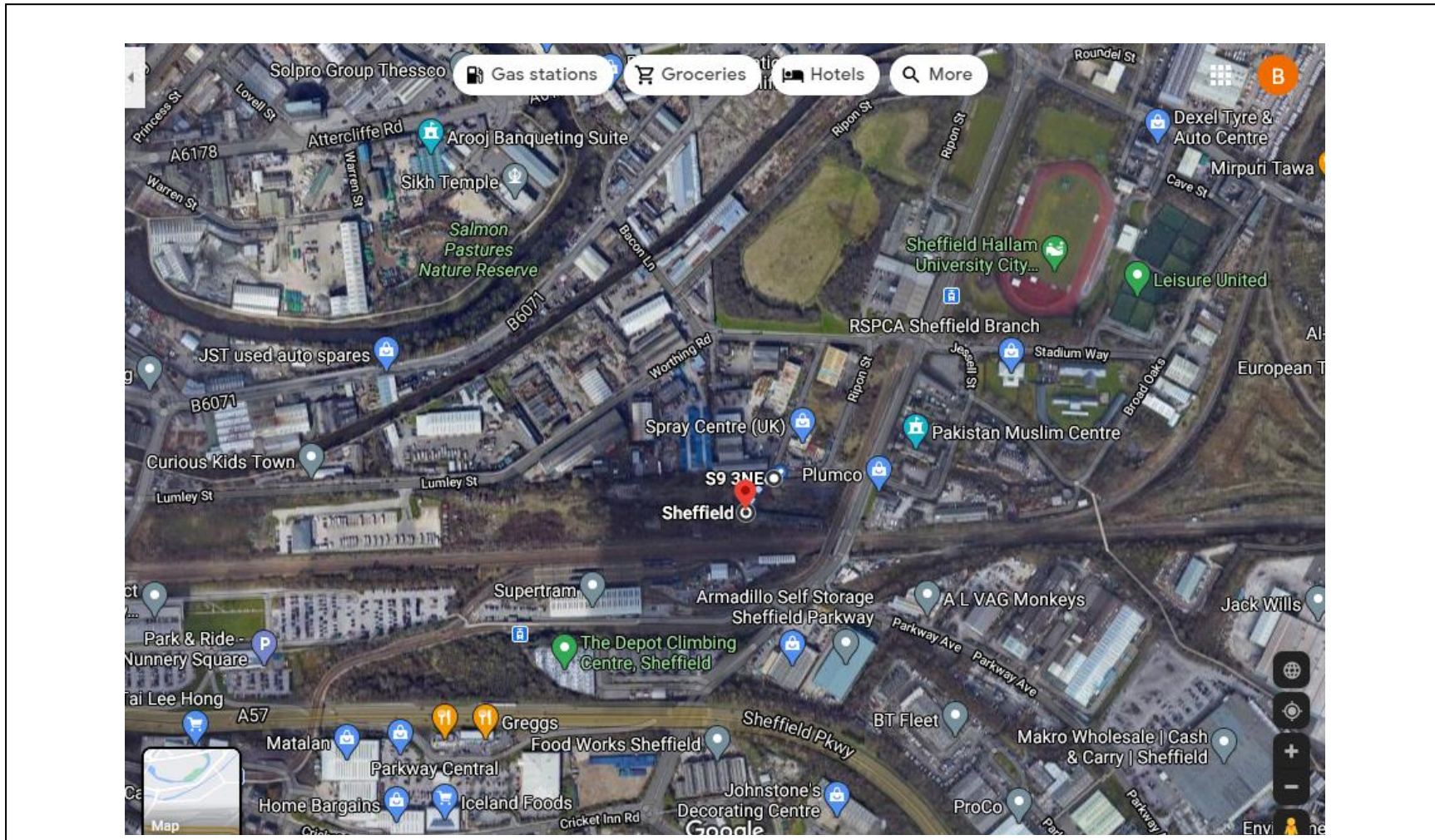


Figure 1.1: Nearby Sensitive Receptors

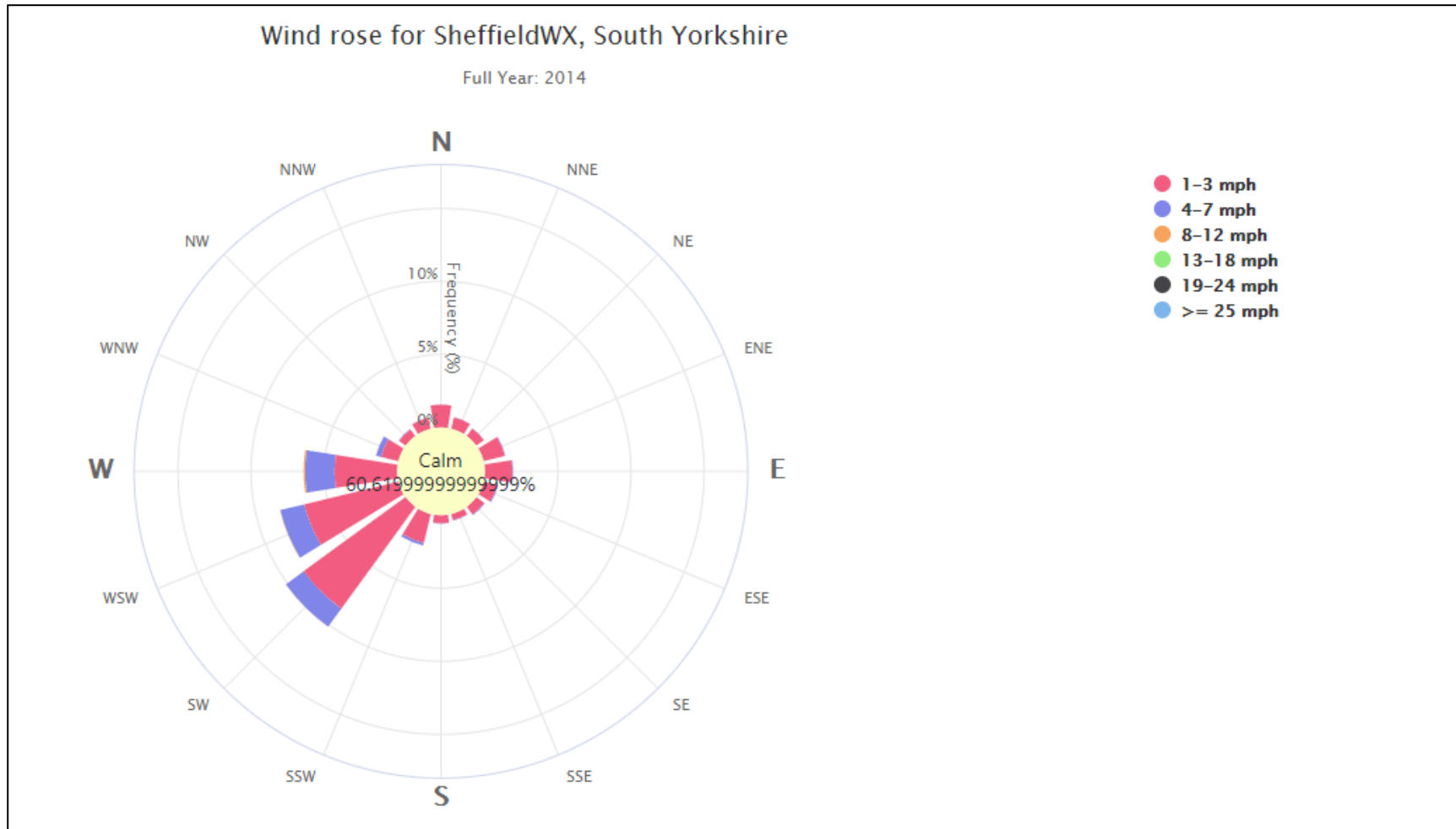


Figure 1.2: Wind rose showing the AVERAGE WIND DIRECTION AND STRENGTH at Ripon Street Depot

Table 1.2 Sources of Dust and/or other Emissions

Company	Address	Type of Business	Distance from Woodbourne Hill site boundary (m)
E F Westaway Ltd	Arden Works, Bacon Lane, South Yorkshire, S9 3NH	Waste Treatment	137
Sheffield Reclamation Limited	Central Depot, Worthing Road, Attercliffe, Sheffield, South Yorkshire, S9 3JA	HCI Waste TS + treatment	96
Albion Waste Management Ltd	Albion House, Jessel Street, Broad Oaks, SHEFFIELD, South Yorkshire, S9 3HY	Waste Transfer Station	240
Spray Centre Uk Ltd	9, Woodbourn Hill, Sheffield, S9 3NE	Car Manufacturers	41
J S R Precision Engineers	4, Woodbourn Hill, Sheffield, South Yorkshire, S9 3NE	Precision Engineers	99
John Henry Haulage	77-79 Worthing Road, Sheffield, South Yorkshire, S9 3JA	Road Haulage Services	112
Century Mill Factory Shop	5, Ripon Street, SHEFFIELD, S9 3LX	Homefurnishings - Manufacturers	125
Simonic Precision	Lumley Street, Sheffield, S4 7ZJ	Precision Engineers	125
Veolia	Lumley Street Service Centre, Lumley Street, Sheffield, S4 7ZJ	Waste Disposal Services	157
Stainless Finishing Services	Unit 4, Norfolk Bridge Business Park, Foley Street, Sheffield, S4 7YW	Metal Finishing Services	217

2. Operations at Ripon Street Depot

2.1 Waste Deliveries to Ripon Street Depot

Waste is delivered to site by road using covered 8 wheel HGV's as covered in the Environmental Management System (EMS). Vehicles fitted with auto sheet mechanisms will be required to have the sheets on prior to arrival on site. Once on site, vehicles will be required to remove sheets by the waste inspection area to allow preliminary waste inspections to take place.

The following records are kept with regards to each waste delivery:

- Date / time
- Vehicle registration
- Waste carriers licence details
- Driver name
- Type of waste
- Quantity of waste
- Origin of waste

The EMS contains information for customers and vehicle drivers regarding dusty loads. Vehicles which are deemed to be causing dust will not be permitted onto site.

2.2 Overview of Waste Processing, Dust, and Other Emission Controls

An overview of the site layout can be found in figure 2.1 which shows;

- The site infrastructure
- Loading and unloading areas
- Storage stockpiles (waste and product)
- Location of mobile plant
- Waste stockpiles
- Spill kits

The site entrance is accessed from Ripon Street via HPL plant storage area. HGV's must report to the main office which is located in the plant storage area before they access the permitted area. The access to the permitted areas is located at the north east corner of the site. Once documentation and paperwork are checked and approved, the HGV's will enter the permitted area and tip their load in the correct stockpile area as directed by the main office.

Waste material is processed using a crusher or screener depending on the nature of material. Once processed it will be tested and moved using a loading shovel to the product bays located to the east of the site.

The waste stockpiles are to be kept neat and not exceed 3m in height. Regular tidying

of the stockpiles will take place to ensure encroaching of different types of material does not occur.

Product bays located to the east of the site will consist of concrete bays approximately 3m in height. Stockpiled product material will be kept below the height of the walls, and regular housekeeping carried out in this area to prevent encroaching of materials.

The site surface is made up of hardstanding which will be cleaned using a road sweeper as and when required. During dry windy weather, dust suppression will be used on a regular basis to ensure dust does not leave the site boundary. Dust suppression will be carried out using a bowser which will target areas of the site as required. Mobile plant will also have the option to use dust suppression whilst performing treatment.

Table 2.1 below shows the handling/processing of different waste streams at the site.

Table 2.1 Typical waste types brought to Ripon Street Depot

European Waste Code(EWC)	Product Description	Tonnes/year	Destination within facility					Process
			Screening	Crushing		Storage	Storage	
			Area	Area		Bay 1	Bay 2	
17 01	Concrete, bricks, tiles and ceramics	50,000	✓	✓		✓		Crushing and screening
17 05	Soil (including excavated soil from contaminated sites) stones and dredging spoil	50,000	✓				✓	Screening and blending
Total		100,000						

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- Spill kits

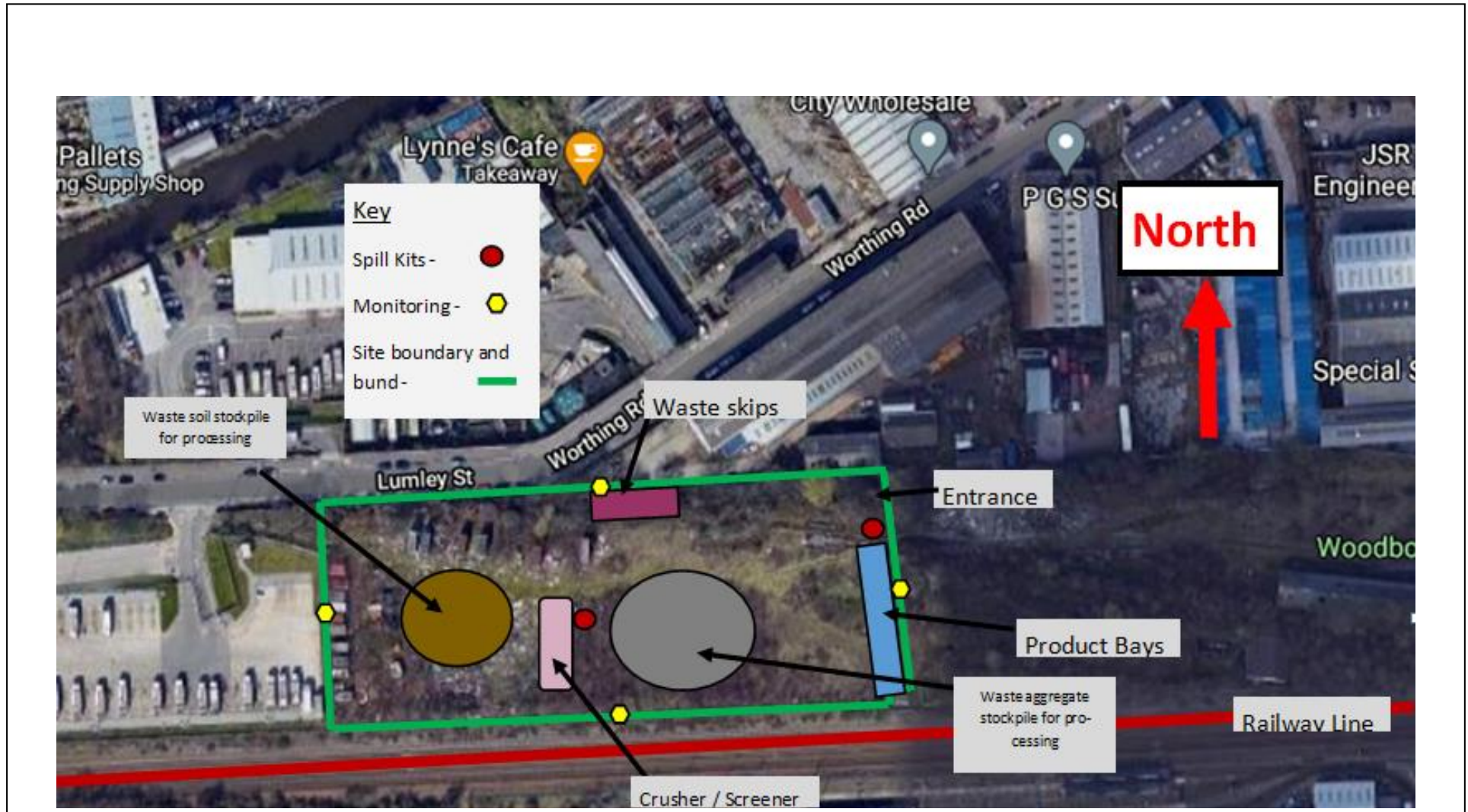


Figure 2.1: Site Layout Plan

Site activities include segregation, crushing and screening. There are two areas to the waste acceptance part of the site, Area 1 is used for storage and processing of concrete, bricks, tiles and ceramics, and Area 2 is used for storage and processing of soil and stones. Area 1 plant includes an excavator and crusher (which also screens). Area 2 plant includes an excavator and screener. A loading shovel will be used to tidy stockpiles in both areas, and move the processed material to the product bays. Waste material is kept in managed stockpiles. It is not practical to use bays at this point in the process as material is tipped into a waste stockpile with several tipping points for HGV's.

Double handling is minimised as much as possible, the waste material is tipped, processed, and then moved to the product stockpiles. Material is not disturbed unless it is being processed, moved or housekeeping carried out to stockpiles. The design of the site may change overtime and this DEMP will be updated accordingly.

The source of dust is likely to arise from the following:

- Tipping of soil
- Processing of soil & stones and concrete
- Vehicle movements across site

The pathway for the above sources is likely to be air.

Receptors are outlined in Table 1.1.

The source of other emissions is likely to arise from the following:

- Plant on site used in the process / treatment of waste
- Vehicles and HGV movements on and off-site

The pathway for the above sources is likely to be air.

Receptors are outlined in Table 1.1.

The control measures on site to prevent dust and particulates are as follows:

- Check weather conditions on a daily basis
- Keep roads clean and swept
- Wheel-washing facilities will be installed to reduce mud drag out onto the public highway.
- Wheel wash (this is not located on the permitted part of the site)
- Water based targeted dust suppression

- Drop heights into haulage vehicles etc will be minimised and dry materials leaving site will be sheeted. All vehicles will adhere to on site speed limits.
- Material kept below bay heights
- Maintenance schedule for all plant and vehicles
- Haul routes will be planned with minimum distances.
- All dust and air quality complaints will be recorded and acted upon. The cause will be identified, and appropriate measures taken to reduce emission in a timely manner and recorded. Records will be made available to regulators upon request.
- Stockpiles will be graded and dampened down to prevent windblown dust and lose material removed as soon as possible.
- Dry, dusty materials will either be cleaned up or damped down.
- Regular checks of buildings within 100 m of the site boundary will be carried out to check for soiling due to dust with cleaning carried out where necessary.
- Roadways and surfaces will be swept and damped down with water at regular intervals where dust may be a problem.
- Visual checks are the most common way of monitoring dust leaving the site boundary. Daily checks will be made of the site boundary during dusty activities, checks will be backed up with photographic evidence and recorded in the site diary.
- HPL will ensure that all operatives employed on site: understand their responsibilities for minimising the generation of particles and dust; appreciate the effect of dust on health and the environment, the benefits of reducing dust generation and the methods to reduce dust generation;
- Include adequate measures within all risk assessment and method statements where dust generation may be a hazard.

2.3 Mobile Plant and Equipment.

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

Description	Make	Model	Emission Rating
Loading Shovel	Volvo	L120G	Tier 4
360 Excavator	Hitachi	ZX210	Tier 4
Crusher	Terrex	Not known at current time	Not known at current time
Screener	Terrex	Not known at current time	Not known at current time

The plant listed above are all owned by HPL. The maintenance schedule for each item of plant is carried out in accordance with the manufacturer's specification. Daily checks are carried out to ensure each item of plant is operating as it should be. Any issues are reported and addressed before the plant is used.

The following control measures are used to reduce emissions on site:

- Ultra low sulphur fuel is used
- No idling of engines
- Daily plant checks
- Maintenance regime to manufacturers specification to reduce the number of impromptu fumes and smoke emitted.
- Consideration given to traffic management to ensure deliveries arrive avoiding busy times of days and vehicles are not queuing outside the site on the public highway.

Routine maintenance (oils and filter) is carried out by site staff and out contractors are brought into carry out major repairs/ service. When items of equipment will need replacing then the emissions will be taken into consideration at the time of purchase. The yard is supervised, and any unnecessary idling of machines is not tolerated, and staff are made aware about idling machinery.

3. Dust and Particulate (PM₁₀) Management

3.1 Responsibility for Implementation of the DEMP

The person responsible for the DEMP and ensuring the procedures are followed and control measures implemented is Tom Hamilton (Managing Director). The DEMP is reviewed on an annual basis or in the response to complaints, environmental near misses, and change in operation. In the event of a review if staff feel that they are not competent to review then a third-party consultant can be brought in to carry out a review on their behalf. Training will be given to staff and operatives in the form of a toolbox talk which will be carried out on an annual basis or if procedures / activities change.

3.2 Sources and Control of Fugitive Dust/Particulate Emissions

Sources

The operations carried out at the site that have the potential to produce dust and particulates are detailed below:

- Vehicles entering and/or leaving the site with mud on wheels, and tracking dust on to or off the site.
- Debris falling off lorries which arrive uncovered.

- Vehicles and plant moving around the site kicking up dust
- Road vehicles tipping waste
- Excavators/360s sorting waste
- Plant sorting waste – trommel screeners
- Plant treating waste – crusher
- Waste dropping from conveyors into stockpiles
- Waste stored in stockpiles
- Site surfaces (not just the ground include around plant and equipment)
- Loading waste materials back on to vehicles.
- Particulate emissions from the exhaust of vehicles/plant/machinery on site.
- Plant on site

The pathway for the majority of the releases is atmospheric dispersion; either primary from the dust/particulate source (e.g. wind whipping of stockpiles) or after tracking onto the public highway on the wheels of vehicles.

The following tables are an EA requirement of this DEMP.

Table 1.3 shows the source, pathway and receptor routes of potential emissions.

Table 3.2 outlines the measures that will be used on site to control dust, particulates and other emissions.

Table 3.1: Source-Pathway-Receptor Routes

Source	Pathway	Receptor	Type of impact	Where relationship can be interrupted
Tracking dust on wheels and vehicles, then mud dropping off wheels/vehicles when dry.	Air, ground / surface water	All receptors listed in table 1.1. Those using Woodbourne Hill Road or Worthing Road	Visual soiling, also consequent resuspension as airborne particulates	Remove mud before vehicles leave site. Woodbourne Hill road is not used by residents only those traveling to a place of work (other industry). There is a long haul road on site which will allow mud to be dropped off before vehicle reaches public high way which is swept on a regular basis.
Debris falling off un-sheeted HGV's	Air, ground / surface water	All receptors listed in table 1.1. Those using Woodbourne Hill Road or Worthing Road	Visual soiling, also consequent resuspension as airborne particulates	Cover lorries before leaving site. There is a long haul road on site which will allow mud to be dropped off before vehicle reaches public high way which is swept on a regular basis.
Tipping, storage and sorting of wastes in the open	Atmospheric dispersion	All receptors listed in table 1.1.	Visual soiling and airborne particulates	Minimise source strength by means of low drop heights, profiling and shielding of piles from wind whipping, positioning sources away from receptors. Dampening down / wetting of materials.
Vehicle exhaust emissions	Atmospheric dispersion	All receptors listed in table 1.1.	Airborne particulates	Regulatory controls and best-practice measures to minimise source strength
Non road going machinery exhaust emissions	Atmospheric dispersion	All receptors listed in table 1.1.	Airborne particulates	Regulatory controls and best-practice measures to minimise source strength

Table 3.2: Measures that will be used on site to control dust/particulates (PM₁₀) and other emissions

Abatement Measure	Description / Effect	Overall consideration and implementation	Trigger for implementation
Preventative Measures			
Site / process layout in relation to receptors	Locating particulate emitting activities at a greater distance and downwind from receptors may reduce receptor exposure, provided that emissions from the source are not dispersed over significant distances.	Activities are located in areas where the topography of the site provides natural abatement. The trees located along the southern site boundary provide shelter and will reduce the amount of dust and emissions leaving the site boundary.	The trees are located there all the time. They will more effectively work during summer months when leave provide more of a barrier than bare trees in the winter. Dust is minimised in the winter due to climatic conditions and wet / damp weather.
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.	Good site practice identified during the site induction, toolbox talks, and the environmental management system.	These measures are in place for the whole time the site is operational.
Minimising drop heights for waste.	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. It is not practical to enclose processes.	Good site practice identified during the site induction, toolbox talks, and the environmental management system.	These measures are in place for the whole time the site is operational.
Good house-keeping	The site has a consistent, regular housekeeping regime that is supported by management, will ensure site is regularly checked and issues	Easy to implement and requires minimal equipment. Encourages a sense of pride and satisfaction amongst the staff which promotes vigilance and a positive culture.	These measures are in place for the whole time the site is operational.

Abatement Measure	Description / Effect	Overall consideration and implementation	Trigger for implementation
	remedied to prevent and remove dust and particulate build up.	Staff should target the areas not caught by the road sweeper and other cleaning apparatus.	
Sheeting of vehicles	Prevents the escape of debris, dust and particulates from vehicles as they travel.	Good site practice identified during the site induction, toolbox talks, and the environmental management system.	These measures are in place for the whole time the site is operational. Limitations may include sub-contractors bringing un-sheeted waste to site for the first time. However they will be reminded of the site rules and loads will be rejected from site on repeat occurrences.
Hosing of vehicles / wheel wash on vehicle exit from the site (although this is not installed on the permitted part of the site)	Hosing removes some dirt, dust and particulates from the lower parts of vehicles and the wheel wash will be more effective for the underside of vehicles.	Hosing and wheel wash takes place but not on the permitted part of the site. Good site practice identified during the site induction, toolbox talks, and the environmental management system.	These measures are in place for the whole time the site is operational. Limitations may be water freezing during winter months. However if this happens it is likely the whole site will be frozen and mud may not be an issue.
Ceasing operation during high winds and/or prevailing	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.	Likely to reduce dust and particulate emissions, however, not a long-term solution. Procedures are identified in the environmental management system to identify when operations will cease.	These measures are in place for the whole time the site is operational.

Abatement Measure	Description / Effect	Overall consideration and implementation	Trigger for implementation
wind direction			
Installed wheel wash (off permitted site)	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. Placement of wheel wash is off the permitted part of the site, but located before vehicles exit the site onto the public highway.	These measures are in place for the whole time the site is operational. Limitations may be water freezing during winter months. However if this happens it is likely the whole site will be frozen and mud and dust are unlikely to be an issue.
Easy to clean surfaces (Tarmac, concrete, hardstanding)	Creating an easy to clean surface, using materials such as concrete and tarmac reduces the amount of dust and particulate generated at ground level by vehicles and site activities.	Concrete, tarmac and hardstanding were existing on the site. There is a maintenance and cleaning procedure in the environmental management system,	These measures are in place for the whole time the site is operational.
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 will be stored and handled.	These measures are in place for the whole time the site is operational.
Reduction in operations (waste throughput, vehicle size,	Reducing the amount of activity on site, including no tipping, crushing or screening of high risk loads during windy weather as well as associated traffic movements should result in	Likely to reduce dust and particulate emissions, however, not a long-term solution. Procedures are identified in the environmental management system to identify when operations will cease.	These measures are in place for the whole time the site is operational.

Abatement Measure	Description / Effect	Overall consideration and implementation	Trigger for implementation
operational hours)	reduced emissions and re-suspension of dust and particulates from a site.		
Remedial Measures			
On-site sweeping	<p>Sweeping could be effective in managing larger debris, dust and particulates but may also cause the mobilisation of smaller particles.</p> <p>Road sweeping vehicles damp down dust and particulates whilst brushing and collecting dust and particulates from the road surface, particularly at the kerbside.</p> <p>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.</p>	<p>Good site practice identified during the site induction, toolbox talks, and the environmental management system.</p> <p>Maintenance is covered in the management system and procedures.</p>	<p>These measures are in place for the whole time the site is operational.</p>
Water suppression with hoses & water jets	<p>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.</p>	<p>Quite water intensive. Maintenance is covered in the management system and procedures.</p>	<p>These measures are in place for the whole time the site is operational.</p> <p>Limitations may be water freezing during winter months. However if this happens it is likely the whole site will be frozen and mud and dust are unlikely to be an issue.</p>

Abatement Measure	Description / Effect	Overall consideration and implementation	Trigger for implementation
Water suppression with mist sprays	Installation of mist sprays around sites, at point source emissions like conveyors, crushers, screeners. It can also assist in the damping down of dust and particulates, therefore, reducing emissions from site.	<p>Very effective at controlling point source emissions of dust and particulates. May be installed if other water suppression is deemed inadequate. required 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.</p> <p>Not effective for use at site boundaries.</p> <p>Uses less water than water bowser</p> <p>Maintenance is covered in the environmental management system.</p>	This may be used on very dry days with a wind speed over 12pmh on crushers and screeners.
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.	<p>Maintenance is covered in the environmental management system.</p> <p>Note - <i>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. If the dust isn't coming from their operations then they should note it down and continue</i></p>	<p>Visual monitoring of dust will take place on a daily basis.</p> <p>A real-time tracker of dust may be installed for a period of time to show the site is not a source of dust and particulate pollution.</p>

Abatement Measure	Description / Effect	Overall consideration and implementation	Trigger for implementation
		<p><i>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.</i></p>	
Shaker grids	<p>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.</p>	<p>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.</p> <p>Maintenance is covered in the environmental management system.</p>	<p>This will be considered if large amounts of mud is needed to be shaken off vehicles.</p>

This is not an exhaustive list of all abatement options, and there may be other technology and abatement options that exist to achieve the same or a greater outcome in reducing the risk of pollution.

The table above is an exercise to make the connection between the pathway and receptor and source. It is to encourage the operator into thinking about how the abatement works, what options could be alternatively more suitable (and possibly cheaper and less intensive to operate regularly) and to go into specific detail about how the abatement works. This will encourage the operator and staff that use this document to not make any assumptions and to ensure that there are no gaps in abating the sources of dust emissions on site.

3.3 Other considerations

Water usage/ availability:

Water will be used solely for dust suppression for the site. The water used for dust suppression will be sourced from the mains supply.

Water usage for dust suppression has been calculated for the worst case scenario (dry and windy conditions for an entire operational day) that 100m³ would be used. This has been calculated on a 20m³ water bowser which will carry out dust suppression (10m³ per hour) on the site every hour for 10 hours.

In the event of a drought:

There is still a requirement to abate fugitive emissions and not cause pollution, if the site can not carry out activities without the use of water, operations will be required to be stopped unless other means can be used which does not cause pollution.

3.4 Enclosure of Waste Processing & Storage Areas

In England the Environment Agency has conducted considerable work to review the effectiveness of dust and particulate control measures that are currently available. It is expensive to fully enclose a waste management facility inside a building but there are significant long term savings to factor in when considering enclosing an operation.

Given the size and nature of the site it is not practical to enclose the operations and processes.

3.5 Visual Dust Monitoring

Routine dust monitoring will be carried out on a daily basis during the site inspection. This will be visual monitoring and findings recorded in the site diary. Each activity (crushing, screening etc) will be visited, and the middle point on each site boundary. Extra dust monitoring will be carried out after a complaint and findings recorded on the dust complaint form located at the end of this document.

Small particles like PM_{10} and $PM_{2.5}$ affect human health but they are not visible by the naked eye so if dust is visible it will include an element of $PM_{2.5}$ and PM_{10} . If dust is not visible there still might be levels of PM_{10} and $PM_{2.5}$.

If dust is detected during the visual inspection the process which is causing the dust will be assessed and checks carried out on plant to ensure they are being operated correctly and have been maintained according to the manufacturer's specification. Assessment will be carried out into moving the activity to a different part of site, and if this would cause elimination or reduction to dust generation. A check will be carried out to ensure dust is not crossing the site boundary, if it is additional mitigation measures may be implemented i.e dust suppression, road sweeping. Additional monitoring may be implemented at more points across the site including the site boundary.

If additional measures proposed fail and dust continues to escape, the activities on site will be stopped.

4. Particulate Matter Monitoring

The monitoring program has been produced taking into account the following factors;

- The type of particulate this DEMP is aimed at is general particulate matter (deposited dust).
- As the potential issue is one of nuisance impacts, then measurement of deposition rates using a horizontally mounted collection gauge such as a Frisbee gauge will be relevant.
- As the waste types (mainly inert) accepted are suitable for making soil, soil substitutes and aggregate and considering the waste acceptance procedures in place it is not deemed necessary to monitor the chemical affects on soils and vegetation or to monitor for organic species, inorganic species, fibres and bioaerosols.
- Research by DETR concluded that 'The issue of dust on ecological receptors is largely confined to the associated chemical affect of dust, and particularly the effect of acidic or alkaline dust influencing vegetation through soil'. Therefore, it is proposed that twice daily visual inspections are supported by quarterly dust deposition monitoring.

4.1 Monitoring Location

Frisbee Guages will be used on each site boundary (N, S, E, W).

The location of the monitoring is shown in Figure 4.1 below.

Figure 4.1 Location of monitoring at Ripon Street Depot



4.2 Operation of the PM Monitoring Equipment

It is proposed Frisbee Gauges will be used to monitor the dust deposition rates from site operations. This work will be undertaken by an external consultant. Data will be reported from the consultant to HPL within 1 month at the end of the sampling period. This data will be sent electronically and will be kept on site as a part of the EMS and site diary. The action level proposed is 200mg m⁻² day⁻¹ as this is the threshold at which complaints are likely. Any breeches of this action level will be investigated and a report produced which will look at the weather conditions, site operations, external activity, site diary records and mitigation measures employed during the monitoring period to determine if the source is likely to be HPL and if so the effectiveness of the mitigation measures employed. Review of the dust deposition monitoring results will take place once received and a judgement can be made about the effectiveness of the mitigation measures employed during this period. This may highlight areas where potential improvements are required.

4.3 Quality Assurance/Quality Control and Record Keeping

The records that will be kept ensuring the system works correctly are as follows:

- The make and model of the monitoring equipment
- The serial number of the monitoring equipment;
- When, how and by whom the data is checked
- When the equipment is calibrated;
- How the equipment is calibrated;
- Copies of the qualifications and training records of who carries out the calibration
- When and by whom the equipment is routinely inspected;
- If the equipment is damaged and/or no longer able to collect reliable data.

4.4 Reporting of Data

Data will be reported to the Environment Agency on an annual basis or when there is an exceedance of the permit conditions. This will be in the form of a notification email which provides details of the exceedance, weather conditions and site activities and whether they were deemed to be operating normal or abnormal.

4.5 Additional Detailed Monthly Reporting

The action level for the Frisbee Gauges proposed is 200mg m⁻² day⁻¹, as this is the threshold at which complaints are likely to occur. Any breach of the action level will be investigated and a report produced which will look at the weather conditions, site operations, external activity, site diary records and mitigation measures employed during the monitoring period to determine if the source is likely to be HPL and if so the effectiveness of the mitigation measures employed. Repeated exceedances may arise from the local roads, or railway line and not necessarily from site. Data will be compared to any other local data to see if results are comparable.

5. Actions when alarm is triggered.

There are no alarms associated with the dust gauges.

1. The Site Operations Manager assesses yard activities and the nature of the waste handling and deliveries immediately prior to the alarm being activated, to work out what has caused the alarm to be activated.
2. If the source cannot be established with 100% confidence, the Site Operations Manager on duty suspends the **likely** dust/particulate generating activities, i.e. crushing / screening.
3. If the source is within the site's control, the Site Operations Manager on duty takes appropriate action in terms of dust/particulate abatement, to ensure that the alarm is not re-activated. This may take the form of the following;
 - (a) Investigating the source of the dust/particulates to prevent a re-occurrence.
 - (b) Suspending operations which are not being conducted using best-practice controls as set out in Table 3.1.
 - (c) Additional use of the dust abatement measures.
 - (d) Logging findings of a – c in the site diary, and also in the reporting template within the relevant appendix of the Environmental Permit.

6. Reporting and Complaints Response

All complaints are taken seriously by the site management. If a complaint is received, it will be thoroughly investigated, and information and findings recorded (appendix A of this document). The following details will be recorded:

- Name of complainant
- Date
- Time
- Location of complaint
- Nature/ description of the complaint

An investigation will then be conducted looking at the following points;

- Weather conditions (wind speed, direction, rainfall, humidity)
- Site activities at and around the time of the complaint
- External causes/ sources of dust
- Any dust mitigation measures in use at the time of the complaint
- Results of visual walk around of the site perimeter undertaken in a response to the complaint and additional to the routine monitoring.
- Conclusions of the investigation to be recorded in the site diary.

All complaints will be responded to within 2 working days.

6.1 Engagement with the Community

The community will be kept informed of works being undertaken at the site. Liaison will take place with neighbouring businesses carrying out introductions, informing them of the site activities and if there is likely to be any disruption. The contact details will be made available for all and the complaint process explained. Day to day activities are likely to remain consistent and should not disturb the neighbouring businesses and industry.

6.2 Reporting of Complaints

Complaints received from external parties must be recorded on the Complaints Record Form (Appendix 7 of EMS) and be investigated by the Managing Director and Operations Manager to determine the root cause and prevent reoccurrence. Records of all complaints must be held on file and be retained for 3 years. Complaints will be recorded on the non-conformance database (Appendix 8 of EMS). Complaints will be reported to the Environment Agency monthly via email which will contain relevant details about the complaint and action taken.

6.3 Management Responsibilities

Complaints received from external parties must be recorded on the Complaints Record Form (Appendix 7 of EMS) and be investigated by the Managing Director and Operations Manager to determine the root cause and prevent reoccurrence. Records of all complaints must be held on file and be retained for 3 years. Complaints will be recorded on the non-conformance database (Appendix 8 of EMS).

6.4 Summary

This dust management plan has been produced to support the bespoke permit application for HPL. The DEMP ensures that dust and emissions are considered and controlled during site activities to ensure there is no harm to human health or the environment. This plan will be updated on an annual basis or when site activities change.

Appendix A - Dust 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	