



Britannia Refined Metals Ltd

BRM, Northfleet- E-Scrap Project

Dust Management Plan



Report for

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Document revisions

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1. Introduction

WSP has been commissioned by Britannia Refined Metals Ltd (BRM) to produce a Dust Management Plan (DMP) for operations to be undertaken following introduction into service of a facility that will store a range of specific types of waste electrical and electronic waste (WEEE), some of which will be shredded at the site. These wastes are referred to collectively as E-Scrap throughout this DMP.

The DMP identifies the potential sources of dust emissions, the possible impacts associated with dust emissions associated with operations and details the measures required to prevent and minimise the dust and particulate emissions. The DMP must be read in conjunction with the BRM Permit application¹ and guidance published by the Environment Agency relating to Appropriate Measures for WEEE² and Dust and Particulate Emission Management Plan 'Control and Monitor Emissions for your Environmental Permit'³.

The aim of the DMP is to:

- Minimise dust generation and migration from the site;
- Ensure dust pollution at local sensitive receptors is minimal;
- Establish a dust minimisation strategy which shall be implemented on site;
- Ensure the operations on site consider the potential dust generation; and,
- Ensure that site operates within the permitted dust emissions limits.

¹ BRM Permit application, 808678-WOOD-ZZ-XX-FR-OP-00001.p-03.p-03 October,2022

² Environmental Agency [Waste electrical and electronic equipment \(WEEE\): appropriate measures for permitted facilities - Guidance - GOV.UK \(www.gov.uk\)](https://www.gov.uk/guidance/waste-electrical-and-electronic-equipment-wEEE-appropriate-measures-for-permitted-facilities) (Accessed 02nd March 2023)

³ [Control and monitor emissions for your environmental permit - GOV.UK \(www.gov.uk\)](https://www.gov.uk/guidance/control-and-monitor-emissions-for-your-environmental-permit) (Accessed 02nd March 2023)

2. Background

2.1 Site description

The Installation will be located on Botany Road approximately 2km north-west of Northfleet at grid reference TQ 61180 75850. Botany Road and Manor Way bound the site to the west and the Thames Estuary is to the east. To the south is a container port and to the north are open fields (Broadfield Salt Marsh). The Site location is shown in Figure 2.1. The site layout and layout of the building in which these activities will be undertaken are presented in Figure 2.2.

Figure 2.1 Site location



Figure 2.2 Installation layout

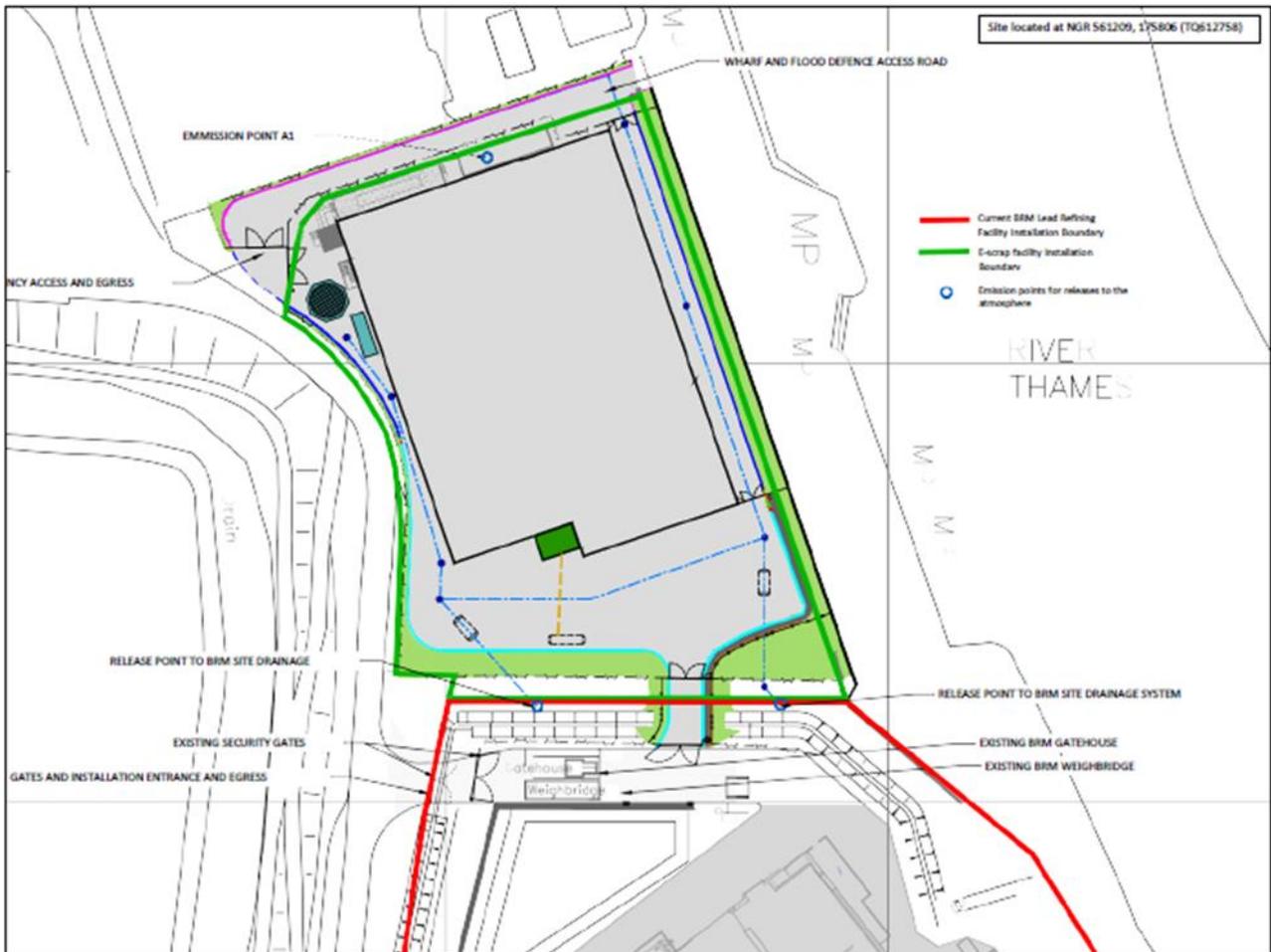
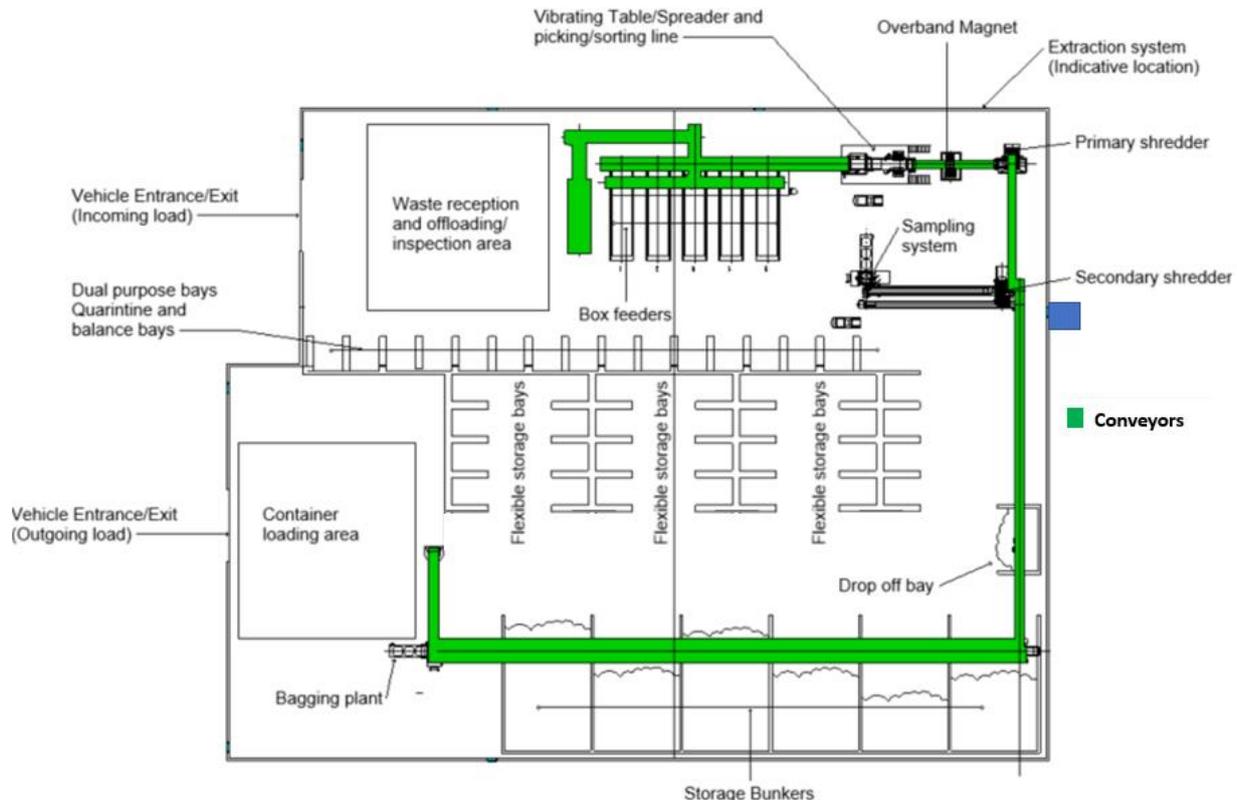


Figure 2.3 Main building layout



2.2 Overview of Operations

The facility will accept specific types of wastes, that will be sampled to characterise metal content, some of which will be shredded. The wastes to be accepted include:

- Wire cables from Automotive Waste*;
- Wire cables from shredded Waste Electrical and Electronic Equipment (WEEE)*;
- Printed circuit boards*;
- Small (shredded) mixed WEEE*; and,
- Smelter grade metal rich fraction of incinerator bottom Ash (IBA). This waste stream is referred to as IBA.

Only those wastes identified with an asterisk will be shredded. These wastes are referred to as E-Scrap throughout this application. The wastes will then be removed from the site for export to sites outside of the United Kingdom where they will be smelted to recover the metal fraction.

There will no chemical treatment of wastes or emissions at the installation.

These wastes to be accepted will be variable in nature and will contain a range of substances some of which are potentially hazardous (including copper fines, lead, antimony, zinc, chromium, certain flame retardants, and persistent organic pollutants). These are therefore classified as hazardous wastes.

The facility will receive up to 25,000 tonnes per annum of these waste streams. The amount of waste received and exported each day will vary though will typically be equivalent to 5 heavy goods vehicles importing or removing waste from the site. It is anticipated the site will mainly

operate during daytime hours, though depending on the level of demand for the waste, it may also operate outside of these hours and on weekends.

The following sets out the operations at the site which have the potential to produce dust and particulates:

- Unloading consignments;
- Sorting waste to remove foreign materials;
- Storing, handling and repackaging wastes in the main building.
- Dust arising from the vibrating spreader, picking activities, the primary shredder and sampling arrangements; and,
- Dust arising from the secondary shredder and sampling arrangements.

Details of the sources and control measures are provided in **Table 6.1**.

2.3 Sensitive receptors

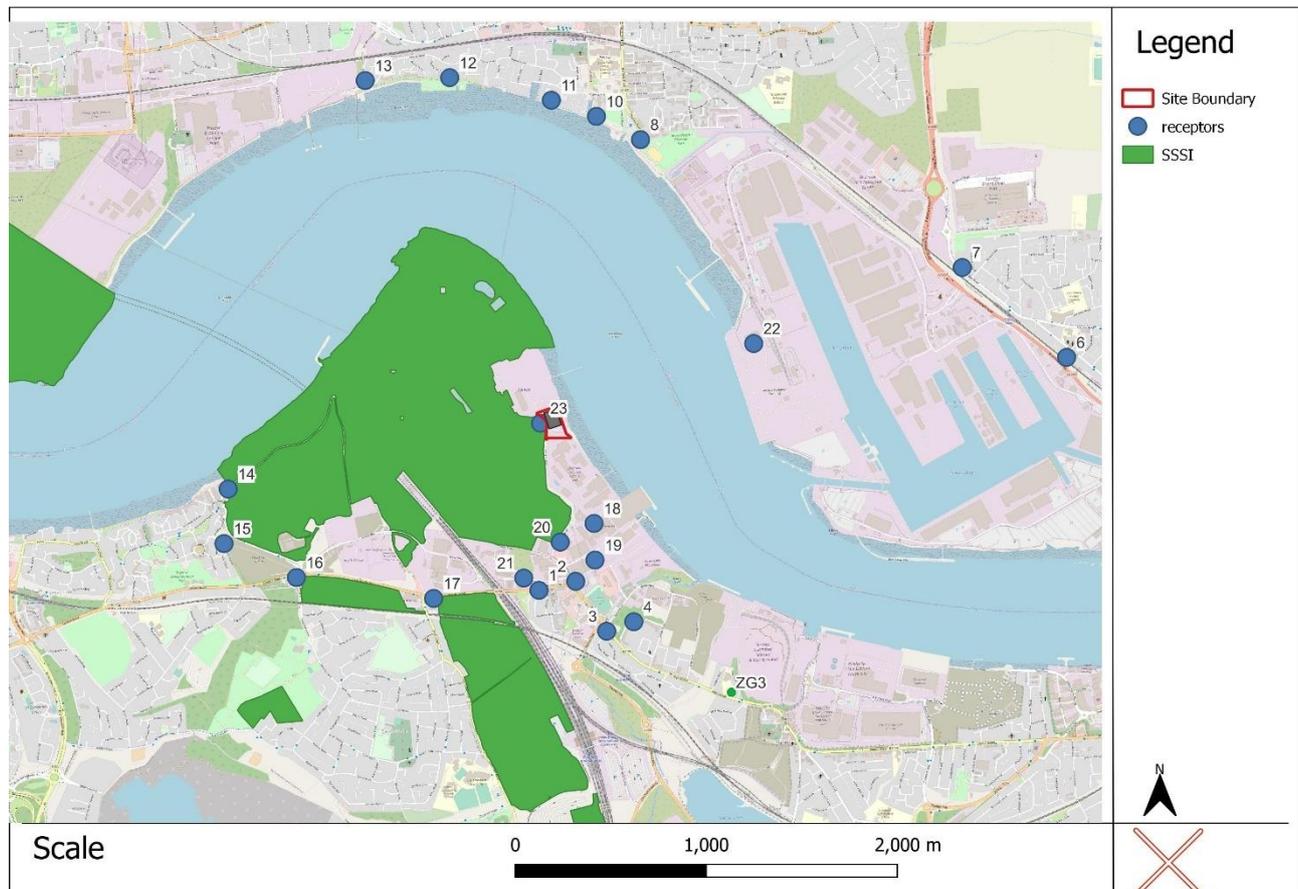
Table 2.1 details the receptors nearby the site that are likely to be impacted by dust.

Table 2.1 Details of nearby receptors

ID	Type	X (m)	Y (m)	Sensitivity	Direction	Distance from Site (m)
R1	School	561147	174897	High	SW	950
R2	Residential	561340	174945	High	SW	910
R3	Residential	561502	174682	High	S	1,200
R4	Residential	561644	174732	High	SE	1,200
R5	Residential	564126	175985	High	SE	2,930
R6	Residential	563910	176126	High	SE	2,720
R7	Residential	563363	176599	High	E	2,290
R8	Residential	561679	177273	High	NE	1,510
R9	Residential	561448	177396	High	NE	1,570
R10	Residential	561212	177481	High	NE	1,330
R11	Residential	560680	177600	High	NE	1,630
R12	Residential	560238	177585	High	N	1,830
R13	Residential	559521	175432	High	N	1,990
R14	Residential	559499	175144	High	W	1,730
R15	Residential	559878	174965	High	W	1,840

ID	Type	X (m)	Y (m)	Sensitivity	Direction	Distance from Site (m)
R16	Residential	560596	174855	High	SW	1,590
R17	Residential	560596	174855	High	SW	968
R18	Industrial	561431	175246	Low	S	449
R19	Gym	561443	175055	Medium	S	642
R20	Commercial	561264	175152	Medium	SW	515
R21	Cafe	561065	174960	Medium	SW	710
R22	Industrial car park	562276	176192	Medium	E	1,060
R23	Ecological – SSSI Swanscombe Peninsula	561168	175762	High	W	30

Figure 2.3 Location of human and ecological receptors

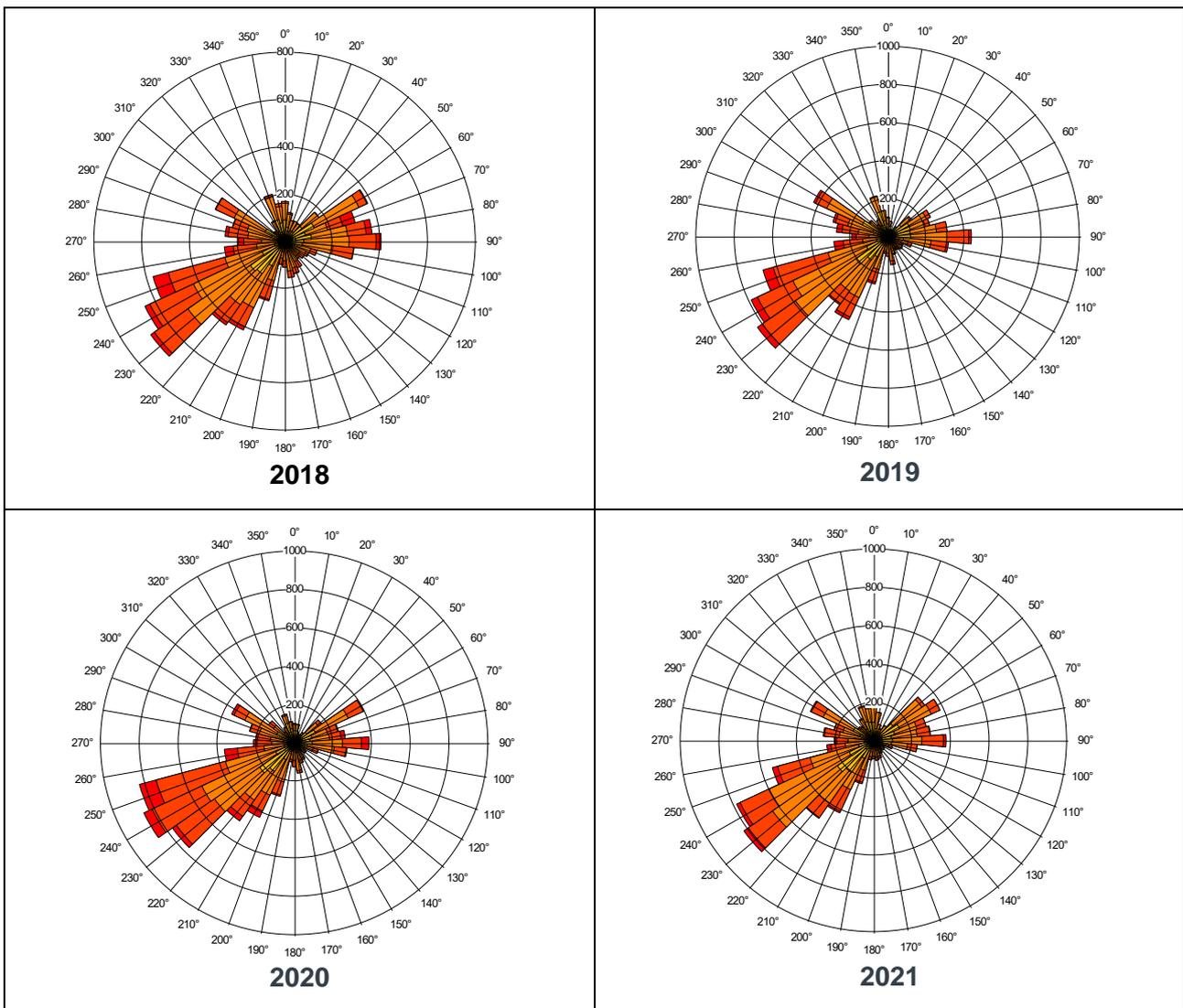


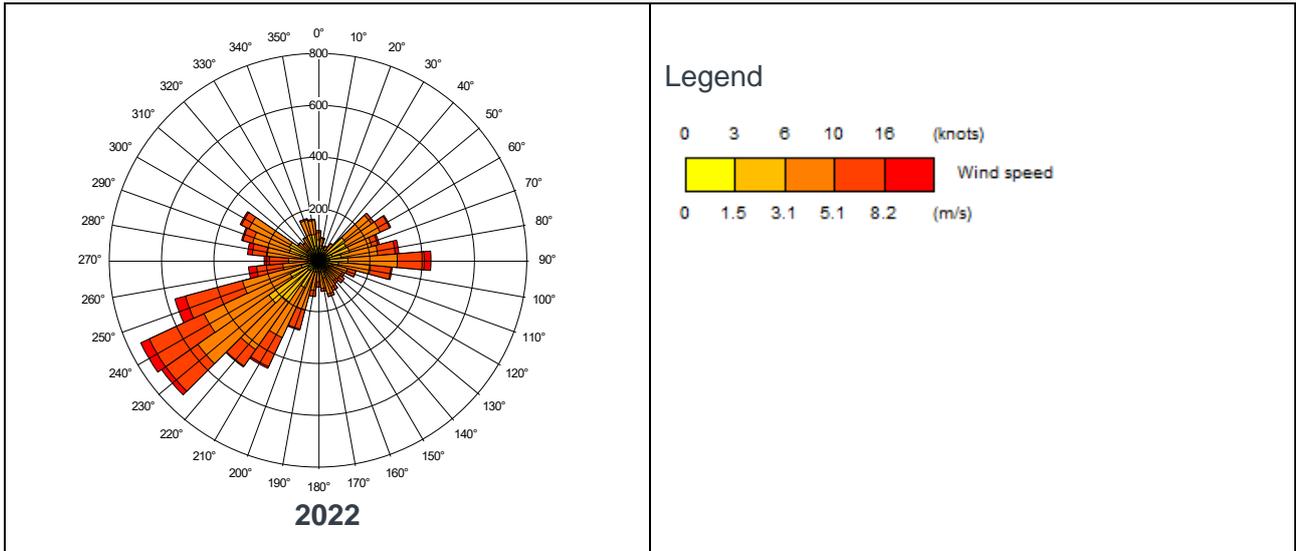
2.4 Wind Rose

The most relevant meteorological data for the Site is from the London City meteorological station, This meteorological station is located approximately 18.3 km northwest, offering data representative of local meteorological conditions. The wind direction is prevailing South West therefore receptors to the North East are more likely to be impacted.

Figure 2.4 shows the wind roses for each year, illustrating the frequency of monitored wind direction and wind speed.

Figure 2.4 Wind Rose: London City meteorological station 2018 – 2022





3. Guidance

3.1 Waste electrical and electronic equipment (WEEE): appropriate measures for permitted facilities.

This guidance explains the standards (appropriate measures) that are relevant to regulated facilities with an environmental permit to treat or transfer all types of WEEE. This document contains an Emission Limit Value (ELV) for channelled emissions to air from all mechanical treatment of WEE. The ELV of 5mg/m³ is stated in the guidance and has been utilised in the associated Air Quality Assessment.

3.2 Environment Agency's dust and particulate emission management plan guidance

This guidance explains the methods to control and monitor emissions from activities that may cause pollution³. It details the measures that must be used to control prevent emissions of dust and particulates. The guidance includes are range of appropriate measures for dust suppression including using appropriate dust suppression systems at appropriate locations and times.

3.3 Institute of Air Quality Management Guidance

The Institute of Air Quality Management (IAQM) has released guidance on the assessment of dust from demolition and construction. Although this guidance is particularly relevant for the demolition and construction works it also covers mitigation measures for the operational phase. The guidance includes a list of mitigation measures that are relevant to the Site and these have been included where appropriate.

Dust complaints are usually associated with periods of peak deposition, occurring during particular weather conditions. There is a 'normal' level of dust deposition in every community and it is only when the rate of deposition is high relative to the norm that complaints tend to occur. The effects of dust on a community will therefore be determined by the following factors:

- the activities being undertaken;
- the duration of these activities;
- the size of the site;
- the meteorological conditions (wind speed, direction and rainfall);
- the proximity of receptors to the activities;
- the adequacy of the mitigation measures applied to reduce or eliminate dust; and
- the sensitivity of the receptors to dust.

4. Roles and responsibilities

This DMP is a living document, and the monitoring procedures, responsibilities and compliance actions will be updated as appropriate. It is the responsibility of the Site Manager or their designated deputy to be aware of its contents, to provide relevant training to staff and to ensure that procedures are being implemented to achieve compliance with this DMP. This will include ensuring that all Site personnel are made aware of the scope and contents of the DMP. All staff will therefore be responsible for minimising any dust emissions from the Site.

During the hours of Site operation, the Site will be supervised by at least one member of staff who is suitably trained and conversant with the requirements of the DMP with respect to:

- Operational controls;
- Site maintenance (site inspection checklist);
- Record keeping; and
- Emergency action plans.

The appropriate resources will be supplied to cover the requirements of this DMP and the Site Manager will ensure that these are communicated effectively and acted upon in an appropriate manner. Key roles and responsibilities relating to air quality are detailed in **Table 4.1**.

Table 4.1 Key roles and responsibilities relating to air quality

Role	Responsibilities
Site/Plant Manager	Ensure that the mitigation and visual monitoring requirements laid out in the DMP are carried out during works on site.
	Ensure that staff are aware of the requirements of the DMP and have access to the document. Regular training of staff will be implemented.
	Undertake and record dust inspections of the site as required by the DMP.
	Ensure that site documentation (including method statements and risk assessments) includes dust mitigation.
	Act on complaints and dust alerts as detailed in the DMP.
	Maintain up-to-date site log of air quality events and complaints.
	Investigate the cause of air quality events and apply additional mitigation as required.
	Act as the key point of contact for queries and complaints regarding air quality emissions from Site.
All site personnel	Carry out the works in line with the DMP requirements.
	Report observations of dust events or deviations from the DMP procedures.
	Attend environmental management training.

5. Visual dust monitoring

Daily visual monitoring will be carried out by a suitable person, trained and nominated by the Site / Plant Manager. As part of the visual dust inspection the nominated person will undertake the following:

- Record all inspections of the routes around the Site, the Site entrance and the site road(s) and any subsequent action on a dust log, to be provided by the Site Manager, at least once a day;
- Carry out Site inspections to monitor compliance with dust control procedures in accordance with this document and record the results of the inspections, including if there are no incidences on Site, in the environmental log at least once a day;
- Record any exceptional occurrences causing dust episodes on or off-site and the action taken to resolve the situation;
- Record where follow up actions were undertaken such as informing stakeholders, re-training staff, request for an update to the DMP or contacting the complainant if necessary.

An example of a dust log report form to be kept is given in Appendix A.

6. Dust sources and control measures

Table 6.1 lists the potential dust sources and control measures that will be implemented.

Table 6.1 Potential dust sources and control measures

Source of dust	Control measures
Unloading consignments	<p>All consignments will be unloaded within the main building. All doors will remain closed whilst consignments are unloaded.</p> <p>No unloading will begin until the reception building doors are closed.</p> <p>Drop heights will be minimised from conveyors, loading shovels, hoppers and other loading or handling equipment.</p> <p>A misting system to settle airborne dust. will operate for activities associated with unloading consignments, sorting waste to remove foreign materials, storing, handling and repackaging wastes undertaken in the main building.</p> <p>The building will be under negative pressure in order to minimise any potential fugitive dust emissions.</p>
Sorting waste to remove foreign materials	<p>Air from the area in which waste will be initially inspected and foreign materials will be dampened by a misting system.</p> <p>Air extracted from areas where E-Scrap will be sorted downstream of the initial inspection area will be extracted and transferred for abatement before release to the environment, using technologies consistent with Appropriate Measures.</p>
Storing, handling and repackaging wastes in the main building	<p>Dust from bagging, handling, sampling and shredding E-Scrap will be extracted and transferred to the abatement system to remove harmful components and fine particles to ensure air released does not give rise to adverse environmental effects.</p> <p>Areas in which E-Scrap and other imported wastes are stored will be damped using a misting system.</p> <p>These activities will be undertaken within the main building which will be installed with fast-closing doors and designed doorways and openings in a way that prevents through-drafts</p>
Dust arising from the vibrating spreader, picking activities, the primary shredder and sampling arrangements	<p>Dust arising from the vibrating spreader, picking activities, the primary shredder and sampling arrangements and bagging will be extracted for abatement.</p> <p>Operations will be carried out inside buildings using negative pressure dust extraction systems.</p>
Dust arising from the secondary shredder and sampling arrangements.	<p>Dust arising from the secondary shredder and sampling arrangements will be retained in a closed loop system.</p>

Source of dust	Control measures
Dust associated with vehicle movements on site	<p>All vehicles entering and leaving sites will be covered to prevent escape of materials during transport.</p> <p>Wheel cleaning facilities will be installed.</p> <p>On-site roads will be inspected for integrity and necessary repairs to the surface will be instigated as soon as reasonably practicable.</p> <p>A maximum speed limit will be imposed.</p>
Dust from Abatement	<p>Material collected within the reverse jet filters will be discharged back inside the building for storage in a purpose designed container via a closed loop system.</p> <p>Mitigation measures specified within the site procedure will be followed when replacing the polishing filters.</p>
Additional Dust Control Measures	
Site management	<p>All dust and air quality complaints will be recorded and cause(s) will be identified. Appropriate measures will be employed and recorded to reduce emissions in a timely manner.</p> <p>The complaint log will be made available to local authority or EA when requested. Any exceptional incidents that cause dust and/or air emissions, either on-or offsite will be recorded in the log book, along with the action taken to resolve the situation.</p>
Operating vehicle/ machinery and sustainable travel	<p>It will be ensured that all vehicles switch off engines when stationary - no idling vehicles.</p> <p>It will be ensured that maintenance and operation of vehicles is done in accordance with manufacturer specifications.</p> <p>No diesel or petrol-powered generators will utilised on site under normal operation.</p> <p>All fork lift trucks operating within the main building will be electric.</p>

7. Complaints

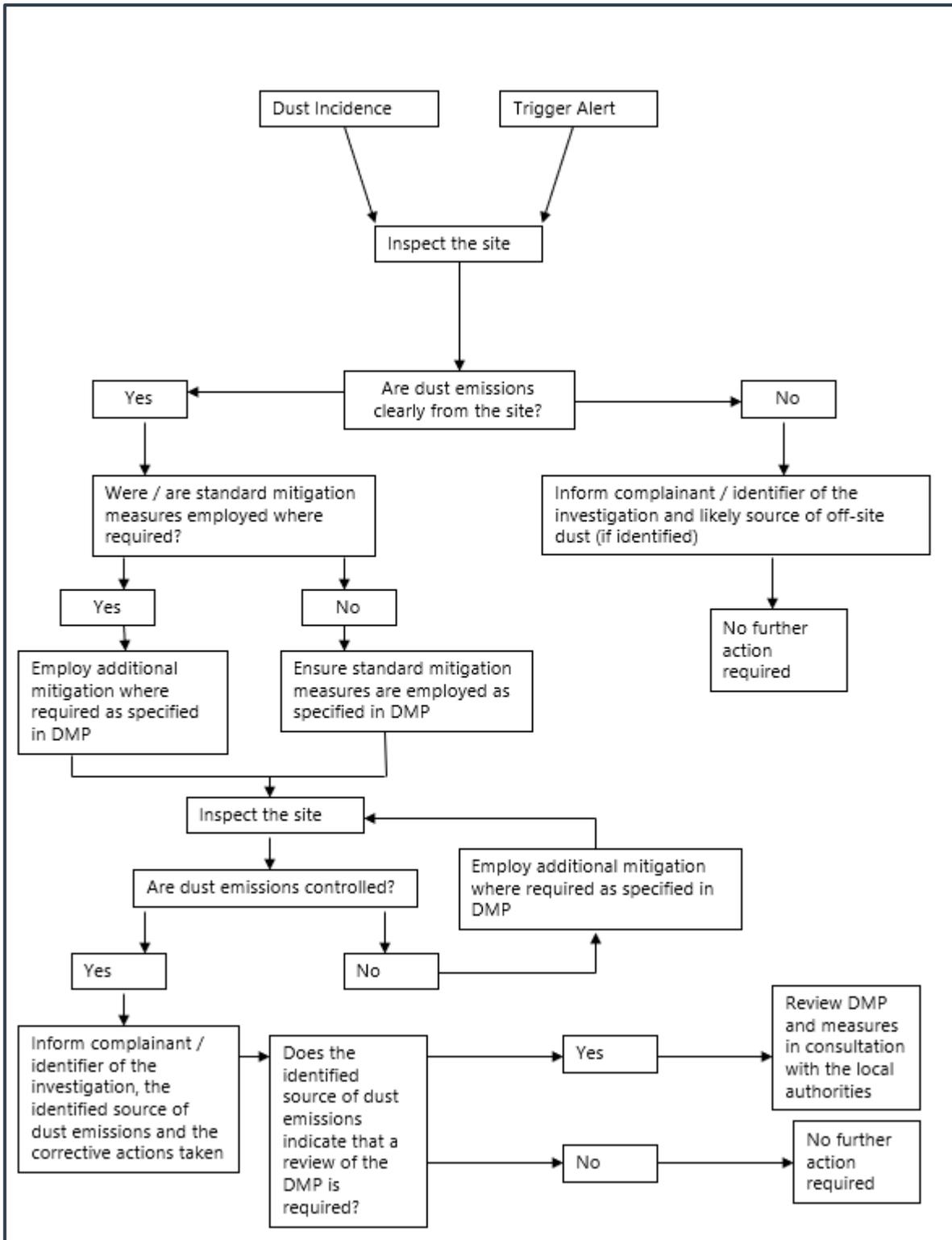
Measures included in this section relate to actions when complaints are received from residents located close to the site. Dust complaint form is provided in Appendix B.

The flowchart shown in Figure 7.1 outlines the steps to be taken following a dust complaint. This aims to identify the likely source of the dust emissions and ensure that the engineering measures and management practices are being implemented effectively on Site and suggests additional measures are implemented to ensure dust emissions are controlled in adverse weather conditions, as far as reasonably practicable. It ends with the complainant/identifier of the incident being informed of the results of the investigation and a review of on-site procedures.

The additional measures to be employed on site during a dust complaint/incident are as follows:

- Increase in inspection frequency of the site, particularly in hot, dry and windy conditions;
- Check of all doors and abatement system to ensure site is operating correctly and;
- Temporary cessation of activities giving rise to fugitive dust should any plant failure be identified.

Figure 7.1 Dust action plan flowchart



8. Review

The DMP will be annually reviewed to ensure best practices are employed and new technologies and practices are incorporated into the DMP as they become available. Details of monitoring will be kept on-site. Proposed amendments to the DMP will be agreed with the relevant local authorities.

Appendix A

Dust Log Report Form

Dust Log					
Date Site Name	Weather	Dry		Wet	
	Wind	N	S	E	W
	Direction (from)	NE	NW	SE	SW
	Wind Speed	Calm	Low	Moderate	High
Daily Site Activities					
<i>This section should outline the planned daily activities on the site for the day.</i>					
Incidents/Complaints/Alerts					
<i>Record details of the incident/complaint/alert, to whom and how it was reported and what time. What was the cause of the incident/complaint/alert and where did it take place? Add detail to Dust Complaint Form.</i>					
Action Undertaken					
<i>Who undertook the site inspection, at what time and was the elevated dust due to site activities or off-site activities? What was done to minimise the dust levels and was this effective?</i>					
Follow-Up Action					
<i>Where there any follow up actions undertaken such as informing stakeholders, re-training staff, request for an updated to the DMP or contacting the complainant if necessary?</i>					

Appendix B

Dust complaints form

Incident Details	
Complainant Name	
Address	
Postcode	
Complainant 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	

