ENVIRONMENTAL PERMIT APPLICATION

DUST AND EMISSIONS MANAGEMENT PLAN

PEMBROKESHIRE ECO-PARK

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Our mission is to accelerate the move to a sustainable resource-efficient economy through re-inventing how we design, produce and sell products; re-thinking how we use and consume products; and re-defining what is possible through re-use and recycling.

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About WRAP

WRAP is a climate action NGO working around the globe to tackle the causes of the climate crisis and give the planet a sustainable future.

Our core purpose is to help you tackle climate change and protect our planet by changing the way things are produced, consumed, and disposed of.

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Acknowledgements

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1.0 Introduction

This Dust and Emissions Management Plan (DEMP) has been prepared to support the Environmental Permit application for the proposed Pembrokeshire Eco-Park near Milford Haven, hereafter referred to as 'the Site'.

The Site will require an Environmental Permit (EP) to be issued by Natural Resources Wales (NRW) before it can operate.

This DEMP sets out the potential sources of dust at the Site, the measures in place to control dust generation and monitor releases, and the management and monitoring actions that will be taken in response to a dust event.

This DEMP is a controlled document, and forms part of the Environmental Management System (EMS). The DEMP will be reviewed on an annual basis. However, the DEMP is intended to be a 'live' document which serves as a reference during daily operations, and as such will be updated on a more frequent basis should the following occur:

- Significant changes are made to the plant or operational practices;
- The regulator requests that the DEMP is updated; or
- Complaints are received, which on subsequent investigation result in the identification of further control measures or remedial action, in addition to those set out within this DEMP.

This DEMP will be kept in the Site office and be available to all employees.

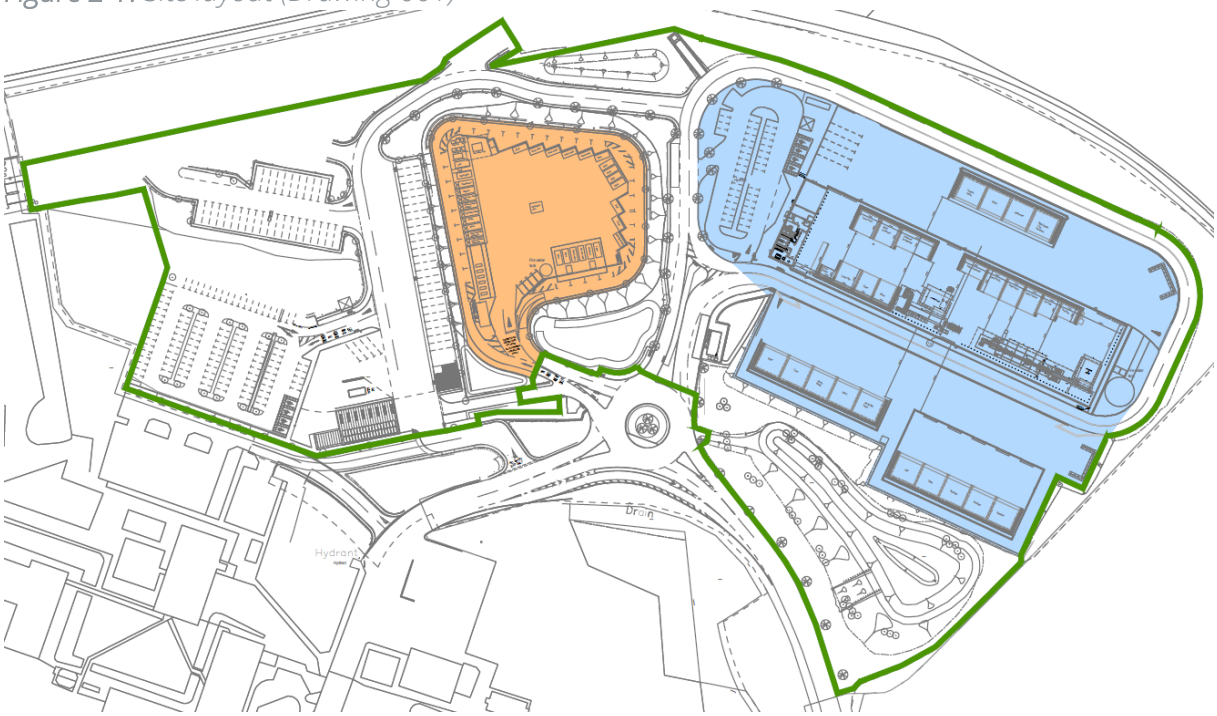
2.0 Site Operations

The Eco Park will consist of a WTS, and a WRC. Proposed operations at the site will be to accept and process up to 74,999 tonnes per annum (tpa) of non-hazardous and hazardous waste arising from household and commercial premises. The daily throughput limit for the site would be 300 tpa. Waste will be delivered via local authority collection vehicles to the WTS, or via commercial or resident's vehicles to the WRC.

PCC's fleet of waste collections vehicles will operate from the Site, therefore garage and workshop, re-fuelling, vehicle washing and parking facilities would be provided.

The layout of the Site is presented in Figure 2-1 below. The WTS area is shaded in blue, and the WRC is yellow.

Figure 2-1: Site layout (Drawing 001)



2.1 Description of Operations

The WTS area comprises three distinct operational areas: the Recycling Building, the Residual Waste Building and the External Covered Waste Bays. The waste types and operations within these areas are summarised in Table 2-1 below.

Table 2-1: WTS Operational Areas

Operation Area	Waste Types Received	Storage Location	Associated Operations
Recycling Building	Food waste	Designated bay and skip / trailer within building	Receipt, storage and bulk export
	Cardboard	Designated bay within building	Receipt, storage and baling prior to bulk export
	News and Pams (wastepaper)	Designated bay within building	Receipt, storage and baling prior to bulk export
	Mixed metals, plastics, and food and beverage cartons	Designated bay within building	Receipt, storage, manual / automated sorting (to remove cartons) and baling prior to bulk export
	Household batteries, WEEE and textiles	Designated storage bins within building	Receipt, storage and bulk export
Residual Waste Building	Residual waste, AHP waste and dry mixed recyclables[1]	Designated bay and/or skip / trailer within building	Receipt, storage and bulk export
External Sheltered and Covered Waste Bays	Wood, scrap metal, rigid plastics, carpets and tyres	Designated external covered bay	Receipt, storage and bulk export
	Glass	Designated external covered bay	Receipt, storage and reduced in size (by lifting and moving of waste) prior to bulk export

The WRC would receive a wide range of waste types, including:

- Residual waste;
- Recyclables;
- Green waste / wood;
- Bric-a-brac (i.e. textiles, books, shoes);
- Electronics;
- Scrap metal / appliances; and
- Furniture.

A full list of waste types to be received at the Site is presented in Appendix A.

[1] With the introduction of Workplace Recycling Regulations the DMR waste stream will become segregated commercial waste. Since the Local Authority currently collect mixed recyclates, and due to the initial uncertainties around the implementation date/method, the storage bay for this stream is shown on the site plans as DMR. Once the new legislation is live and material is collected separately, the current DMR bay will become a contingency bay/a bay for other future materials, and the remaining material will be distributed amongst their respective bays – the capacity modelling took into account some future changes.

The following treatment activities will be carried out within the recycling building at the WTS:

- Bulking for transfer;
- Automated and manual sorting;
- Separation; and
- Baling.

The following treatment activities will be carried out within the WRC area:

- Bulking for transfer;
- Manual sorting (i.e. of residual waste to remove recyclable material); and
- Separation.

All materials would be transferred off-site for processing, recovery, or disposal via third party hauliers or PCC haulage vehicles as appropriate.

Garage and workshop facilities would enable routine checks, inspections, and minor maintenance of the RRV/CCV fleet to be undertaken. Vehicles operating from this site will also be able to re-fuel on-site from a dedicated fuelling area. On-site facilities for vehicle washing would also be provided. Parking for RRVs, CCVs and employee vehicles is provided at the Site. On returning to the Site at the end of each shift, RRVs and CCVs may need to be re-fuelled and washed using the on-site facilities.

2.2 Hours of Operation

Waste collections (via RRVs and CCVs) and ongoing haulage of transferred materials would typically be undertaken at the WTS from 07:00 to 17:00, Monday to Friday. To ensure continuity of service, the Site would occasional be operational (and waste collections would be undertaken) on Saturdays and Sundays, public holidays and over the Christmas and New Year period.

It is anticipated that the WRC will be operational between 6:30 and 20:00 for 7-days per week in the summer and 5-days per week in the winter. During the summer the WRC would be open to the public for waste deliveries between 08:00 and 18:00. During the winter the WRC would be open to the public for waste deliveries between 08:00 and sunset.

2.3 Receipt of Materials

Material would be received at the WTS via road by a fleet of Recycling and Refuse Collection Vehicles (RRVs) and Commercial Collection Vehicles (CCVs). Loads carried by CCVs and CCVs would be inspected for any contaminants or hot loads prior to being directed to the WTS to offload.

Food waste will arrive on Site in pods/stillages within RRVs or trade waste vehicles. Where possible this material will be tipped directly into the designated skip or trailer. In some instances, food waste will be tipped into the designated food waste bay prior to transfer to the designated skip/trailer. The skip/trailer would typically be removed from the Site several times each day on weekdays, and (and replaced with an empty skip/trailer) would be in place for up to 72-hours over the weekend, prior to removal.

Material is received at the WRC via private vehicles and deposited within the appropriate waste storage areas. Material would also be received via commercial vehicles, which would be visually inspected for contaminants or hot loads before depositing load, in accordance with the commercial waste policy and procedure.

2.4 Waste Acceptance Procedures

Loads carried by RCVs and CCVs would be inspected for any contaminants or hot loads prior to being directed to the WTS to offload.

Material received at the WRC via commercial vehicles is visually inspected for contaminants or hot loads before depositing load, in accordance with the commercial waste policy and procedure.

Waste acceptance procedures are followed as per details provided within the EMS. This includes a procedure for how to manage rejected loads and the completion of a rejected load form.

Certain materials received at the WTS would be designated as a priority for bulk export, including:

- Any materials designated as 'high-risk' following inspection;
- Materials which are classified as having a high dust risk potential (i.e. very dry or finely powdered materials) following inspection; and
- Where a site operative is alerted to stored material becoming a significant source of dust emissions.

2.5 General Housekeeping

Regular cleaning of operational areas within the WTS and WRC is undertaken. All operational areas of the Site are swept as and when required, in line with the daily inspections. Where required, appropriate remedial and corrective action will be implemented as soon as practicable. Checks are carried out by site operatives to ensure that there is no old material stuck between building walls, in bays or in corners. Where a build-up of material is identified it will be cleaned up as soon as practicable. Walkways are in place behind bays to ensure staff can gain access for cleaning.

2.6 Mobile Plant and Equipment

Particulate matter can be a by-product of internal combustion and the Site uses several items of plant with internal combustion engines. The following table lists the type, model and emission ratings for the mobile plant and equipment used on Site:

Table 2-2: Mobile Plant and Equipment in Operation

Description	Number in Operation	Operational Areas
CCVs/RRVs	Up to 50 in total	Haul roads
		Tipping areas (Recycling Building, Residual Waste Building and outdoor WTS areas)
		CCV/RRV parking area
Smaller collection vehicles (i.e. caged vans and street sweepers)		Haul roads
		Tipping areas (Recycling Building, Residual Waste Building and outside WTS areas)
		CCV/RRV parking area
Loading Shovel	2	Waste bays and tipping areas (Recycling Building, Residual Waste Building and outdoor WTS areas)
Telehandler	1	
Forklift	1	
Sorting Systems comprising: Over band magnet, eddy current separator, floor infeed conveyors/hoppers/infeed systems, infeed conveyors, bottle perforators and picking station with conveyor.		Recycling Building
Balers	2	Recycling Building
Compactors	2	WRC (compactor shed)

All mobile plant and equipment is to be checked routinely and maintained as per manufacturer's recommendations to ensure correct and efficient operation.

2.7 Loading and Bulk Removal of Material

All materials would be periodically transferred off-site for processing, recovery, or disposal via third party hauliers or PCC haulage vehicles as appropriate.

All waste transfer vehicles leaving the Site are securely sheeted (or enclosed) at all times.

2.8 Mitigation of Community Impacts

The following measures are adopted to ensure a 'good neighbour' approach to local residents:

- A phone number for members of the public to contact the Site Management Team will be visible on the Site board at the entrance; and
- Responding to odour complaints promptly and keeping the complainant informed of outcome of investigation (as detailed in Section 5.2).

3.0 Site Location

3.1 Human Receptors

There are a number of sensitive receptors in proximity to the Site, the closest of which is an existing holiday let located approximately 25m north of the Site boundary at Robeston Cross and an existing residential property located approximately 75m northwest of the Site boundary at Robeston West. A number of isolated residential properties and farmhouses are located at a distance 230m or more to the northwest of the permit boundary. Puma Energy, an industrial facility, borders the Site to the south.

Reference should be made to Table 3-1 for presentation of sensitive receptors surrounding the Site.

Table 3-1: Sensitive Receptors

Receptor	Receptor Type	Receptor Sensitivity to Dust	Distance from:	
			Permit Boundary	Dust Source
DR1	Holiday let	High	25m	60m
DR2	Residential dwelling	High	75m	160m
DR3	Residential dwelling	High	230m	300m
DR4	Residential dwelling	High	330m	380m
DR5	Residential dwelling	High	590m	610m
Puma Energy	Industrial	Low	At boundary	100m

The discrete receptors above do not represent an exhaustive list; the closest sensitive receptors in each direction surrounding the Site have been identified.

The receptor sensitivity has been determined in reference to the IAQM Minerals Dust Guidance[2] in which residential dwellings are determined to be of a 'high' sensitivity to odours and farms as 'low sensitivity to odours. However, in order to provide a suitably conservative approach within this assessment, farms have been determined as 'high' sensitivity.

Figure 3-1 illustrates the sensitive receptors (green triangle markers), Puma Energy facility (green shaded area), permit boundary (red outline), WTS area (blue shaded area) and WRC area (orange shaded area).

Figure 3-1: Sensitive Receptors

[2] Guidance on the Assessment of Mineral Dust for Planning, Impacts Institute of Air Quality Management, v1.1, May 2016.

3.2 Ecological Receptors

The Multi-Agency Geographic Information for the Countryside (MAGIC)[3] website was utilised to identify sensitive ecological sites in proximity to the Site. The following European or International designations were considered:

- Special Scientific Interest (SSSI)
- Special Area of Conservation (SAC);
- Special Protection Areas (SPA);
- RAMSAR;
- Local Wildlife Sites;
- Local Nature Reserves; and
- Ancient Woodland.

No European or International designated ecological sites were identified within the Site locale (i.e. within 1km).

There are two areas of ancient woodland located in the Site locale, the closest of which is located approximately 270m west of the site. Additional ancient woodlands are located at a distance of 510m or more to the north west of the Site.

[3] www.magic.gov.uk accessed March 2023.

4.0 Sources, Releases and Impacts

4.1 Identification of Dust Sources

In reference to the Site operations (as outlined in Section 2.0) the following potential dust sources at the Site are identified:

- Road vehicles entering and leaving the site, tracking material out onto the public highway;
- Internal vehicle / plant movements within the Site;
- Debris, dust or particulates released from loaded vehicles;
- Unloading, loading, storage and handling of materials at the WTS;
- Unloading, loading, storage and handling of materials at the WRC;
- Material processing (i.e. sorting, separation and baling); and
- Exhaust emissions from vehicles/plant operated.

4.2 Control Measures

The following dust control measures are adopted at the Site. In the first instance, operational measure have been adopted to minimise or prevent the release of dust. Where dust emissions cannot be prevented, mitigation measures (such as containment) would be adopted to further minimise or prevent the release of dust.

Table 4-1: Control Measures for Dust/Particulates

Abatement Measure	Description / Effect	Overall Consideration and Implementation	Trigger for Implementation
Location of Site Operations	The operational areas are generally located towards the centre of the Site.	Maximises the distance between the source and receptor, thus reducing pathway effectiveness.	Designed-in measure (always in place).
Site speed limit and minimisation of vehicle movements on site	Reducing vehicle speeds reduces dust emissions from vehicles movements. A speed limit of 10mph is enforced on internal haul roads which reduces re-suspension of particulates by vehicle movements.	Implement as part of good practice and incorporated into training / induction process. Speed limit clearly presented around the Site.	Enforced at all times when the Site is operational.

Abatement Measure	Description / Effect	Overall Consideration and Implementation	Trigger for Implementation
Minimising material drop heights	Reducing the height at which materials are handled reduces the potential for debris, dust and particulates to be suspended and dispersed by winds.	Implement as part of good practice and incorporated into the training process.	Implemented at all times that the Site is operational.
Good housekeeping	A consistent, regular housekeeping regime is in place to ensure Site is kept clean, and in doing so prevents dust and particulate build up within the operational areas. Less dust present in operational area would limit the potential for resuspension of that dust from site operations (such and vehicle movements).	Easy to implement and requires minimal equipment. Encourages a sense of pride and satisfaction amongst the staff which promotes vigilance and a positive culture.	Implemented at all times that the Site is operational.
Sheeting of loaded vehicles (unless enclosed)	Minimises the escape of debris, dust and particulates from loaded vehicles.	Loaded vehicles would be checked for coverings upon entering and prior to leaving the Site.	Implemented for all loaded vehicles entering/leaving the Site.
Surfacing of vehicle routes	Site haul roads and access roads are hardstanding. The operational areas at the Site are an impermeable surface.	Hardstanding or impermeable surfaces limit the potential for vehicles movements to resuspend dust/particulates.	Surfaces are periodically inspected for signs of wear or damage. Remedial works will be commissioned as required.
Special measures for materials with a high dust potential	Where materials are identified to have a high dust potential (i.e. very dry green material or crushed glass) the handling and retention time of those materials, will be minimised.	Reducing handling operations and retention time, or wetting down materials identified to have a high dust potential would greatly reduce potential dust emissions from that material.	Implemented where materials are identified to have a high dust potential (through waste inspection, visual monitoring or operator observations).

Abatement Measure	Description / Effect	Overall Consideration and Implementation	Trigger for Implementation
	In addition to this, dust suppression measures (wetting of the material) may be implemented if required.		
Marking of stockpile areas	Clear delineation of stockpile areas minimises the risk of vehicles traversing across loose particulates on the ground.	Vehicles traversing across loose particulates on the ground could cause resuspension of dust from the materials. These measures can be easily implemented to avoid such occurrences.	Implemented at all times when the Site is operational.
Containment or sheltering of stockpiles	Containment or sheltering of stockpiles can provide effective protection of materials and operations from wind-whipping, this reducing pathway effectiveness.	At the WTS, materials are stored either within a building or within a covered external bay. providing a high level of protection from winds. At the WRC, materials are stored either within a designated skips or containers, providing a moderate level of protection from winds.	Designed-in measure (always in place).
Dust Suppression	Water suppression can be a highly effective way of reducing the dust potential at-source, eliminating the pathway to the receptors.	Water suppression is available (via a hose pipe) at all material storage areas. Wetting down of materials would greatly reduce the dust potential of those materials.	Implemented as required, to be determined by the Site Manager by monitoring of meteorological conditions (i.e. identify periods of low rainfall, high temperatures and/or low wind speeds blowing towards sensitive receptors).
Visual Dust Monitoring	Visual dust monitoring provides a cost-effective method of monitoring that allows for pro-active, immediate	Where monitoring identifies that dust from the Site operations is present beyond the Site boundary, investigation would be undertaken,	Both periodic and reactive dust monitoring is undertaken as detailed in Section 5.1.

Abatement Measure	Description / Effect	Overall Consideration and Implementation	Trigger for Implementation
	response to dust generating events.	and remedial measures implemented, as outlined in Section 5.1.	

4.3 Magnitude of Dust Emissions

Potential magnitude of dust emissions from sources at the Site are presented in Table 4-2. The potential magnitude of emissions has been determined in consideration of the proposed Site operations (Section 2.0), dust potential of materials (Appendix A) and control measures (Section 4.3).

Table 4-2: Dust Release Inventory

Dust Source	Potential Magnitude of Emissions	Reasons
Vehicle movements – access road	Low	• Hardstanding access road. • Minimal trackout from Site due to impermeable haul roads.
Vehicle and plant movements – internal haul roads and operational areas	Low	• Hardstanding internal haul roads. • Impermeable surface for all operational areas . • Site speed limit of 10mph or less.
Debris from loaded vehicles	Low	• The majority of waste types received have a low dust potential (see Appendix A), reducing the significance of dust re-suspension during transit. • Vehicles are covered when entering or exiting the site (sheeting or enclosed vehicles).
Unloading, loading and storage of materials at the WTS	Low	• The majority of materials handles/stored have a low or negligible dust potential. • All materials are stored on an impermeable concrete surface. • Restriction of vehicles movements within the designated storage bays and clear designation of stockpile bases. • Drop heights are minimised where possible. • Stockpiles are sheltered by either the Recycling Building, Residual Waste Building or external bay enclosures (as detailed in Appendix A). These structures would prevent or mitigate wind whipping through application of a physical barrier around the stockpiles.

Dust Source	Potential Magnitude of Emissions	Reasons
		• Water suppression will be used to dampen stockpiles which are identified to be a significant source of dust emissions (such as glass, or particularly dry/brittle green waste), during periods of dry / windy weather.
Unloading, loading and storage of materials at the WRC	Low	• The majority of materials handles/stored have a low or negligible dust potential. • Drop heights are minimised where possible. • Stockpiles are stored within appropriate containers/skips which are either enclosed, or walled on all sides. These containers/skips would prevent or mitigate wind whipping through application of a physical barrier around the materials.
Processing of materials at the WTS	Low	• The majority of processing operations (such as automated and manual sorting, separation and baling) would involve materials with a low dust potential. • Water suppression would be utilised to dampen the glass stockpile during crushing activities, should this be identified as a significant source of dust emissions (i.e. during periods of dry / windy weather). • Processing operations would be intermittent (on an as-required basis), and during operational hours.
Processing of materials at the WRC	Negligible	• The processing operations (such as manual sorting and separation) would involve materials with a low dust potential. • Processing operations would be intermittent (on an as-required basis), and during operational hours.
Vehicle emissions	Low	• The RCV fleet accessing the site is Euro VI compliant. • Relatively small number of vehicles in use at the Site (see Table 2-1).

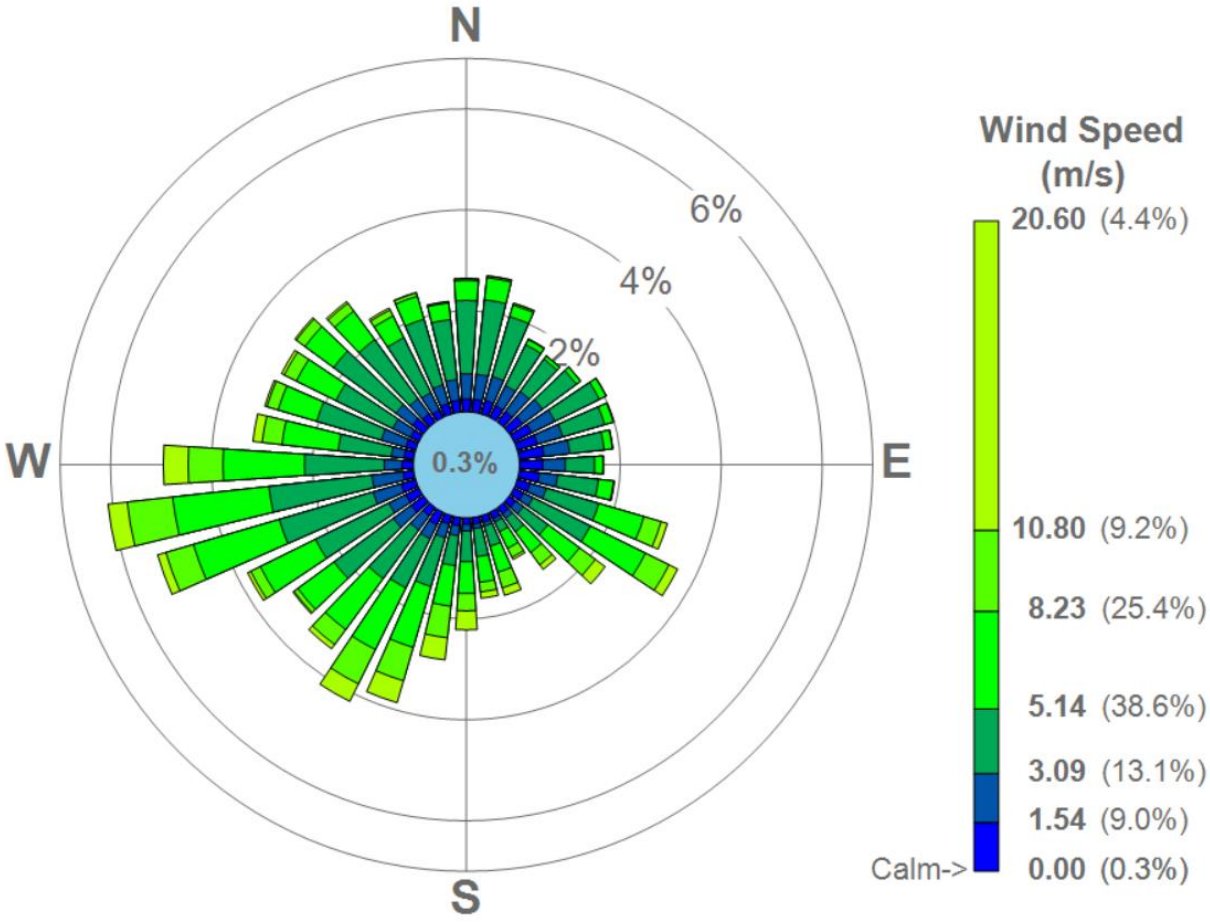
4.4 Pathway

The primary pathway by which dust and particulates may be transported to sensitive receptors is by atmospheric dispersion. In general, higher wind speeds lead to effective

dispersion and dilution of dust emissions due to turbulence. Conversely, dust impacts at sensitive receptors are more likely during period of low wind speeds (below 5m/s).

The nearest meteorological recording station to the Site is Milford Haven Conservancy Boar ('Milford Haven'), located approximately 4km south of the Site. In reference to the 2018 to 2022 metrological data acquired from this recording station, the prevailing winds in the Site locale are from the west and south-west. As such, the potential impact of emissions is likely to be greater to the east north-east of the Site. A composite wind rose from Milford Haven meteorological recording station, showing the frequency of wind speed and direction, is presented in Figure 4-1.

Figure 4-1: Milford Haven Recording Station Wind Rose (2018 - 2022 average)



In reference to the sensitive receptors in proximity to the Site, as presented in Section 3.0, there are no receptors located at a close proximity (i.e. within 250m) downwind (i.e. to the east or northeast) of the Site.

There are a small number of sensitive receptors located in relatively close proximity to the Site to the north (Robeston Cross) and northwest (Robeston West). However in reference to the windrose presented above, the frequency of low wind speeds (below 5m/s) from the south or southeast is low.

In consideration of the above, the overall pathway effectiveness between sources and receptors is considered ineffective.

4.5 Source-Pathway-Receptor Routes

The pathway for the majority of the releases is atmospheric dispersion; wind whipping of stockpiles and handling operations. The source-pathway-receptor routes are detailed in Table 4-3.

Table 4-3: Source-Pathway-Receptor Routes

Source	Pathway	Receptor	Type of Impact	Where Relationship Can Be Interrupted
Vehicle and plant movements	Suspension of dust and particulates as a result of vehicle movements. Atmospheric dispersion of materials transported.	High sensitivity receptors located within approximately 40m of the nearest internal or access haul road.	Visual soiling, also consequent resuspension as airborne particulates.	All external and internal haul routes are either hardstanding or impermeable surfaces, therefore the suspension and accumulation of debris by vehicles whilst on Site (or leaving Site) is anticipated to be minimal. All HGVs transferring material to or from the Site shall be covered (contained vehicles or sheeted). A speed limit of 10mph (or less) is in place for vehicles or plant at the Site.
Unloading, loading and storage of materials at the WTS	Suspension of dust and particulates as a result of unloading and loading activities. Atmospheric dispersion of stored materials.	High sensitivity receptors located within 180m of the nearest waste bays at the WTS.	Visual soiling, also consequent resuspension as airborne particulates.	Stockpiles are sheltered by either the Recycling Building, Residual Waste Building or external bay enclosures (as detailed in Appendix A). All materials are stored on hand standing surface. Drop heights are minimised where possible. Water suppression will be used to dampen stockpiles which are identified to be a significant source of dust emissions during periods of dry / windy weather.
Unloading, loading and storage of materials at the WRC	Suspension of dust and particulates as a result of unloading and loading activities. Atmospheric dispersion of stored materials.	High sensitivity receptors located within 80m of the nearest material storage containers/skips at the WRC.	Visual soiling, also consequent resuspension as airborne particulates.	Stockpiles are stored within appropriate containers/skips which are either enclosed, or walled on all sides. Drop heights are minimised where possible.

Source	Pathway	Receptor	Type of Impact	Where Relationship Can Be Interrupted
Processing of materials at the WTS	Suspension of dust and particulates as a result of material processing.	High sensitivity receptors located within 180m of the nearest waste bays at the WTS.	Visual soiling, also consequent resuspension as airborne particulates.	Water suppression would be utilised to dampen the glass stockpile during crushing activities, should this be identified as a significant source of dust emissions (i.e. during periods of dry / windy weather).
Vehicle emissions	Atmospheric dispersion of exhaust emissions.	High sensitivity receptors located within approximately 40m of the nearest internal or access haul road.	Airborne particulates.	The RCVs/RRVs accessing the site are Euro VI compliant. Relatively small number of vehicles in use at the Site (see Table 2-1).

5.0 Monitoring and Complaints Procedure

5.1 Dust Monitoring

5.1.1 Visual Dust Monitoring

Visual dust monitoring provides a cost-effective method of monitoring that allows for pro-active, immediate response to dust generating events. Visual dust monitoring also enables the effectiveness of the operational and mitigation measures in place to be assessed.

Visual assessment is undertaken on a weekly basis by Site operatives for airborne or deposited dust. Weekly assessments include, as a minimum, a visual assessment of the following areas (identified as areas / activities with the highest potential for dust generation):

- Perimeter walk around;
- If required, offsite walkover surveys;
- Material storage areas;
- Internal haul routes; and
- Access road and public highway near Site exit.

Based upon the size of the Site, it is considered viable for weekly monitoring to include a walkover of the northern permit boundary (i.e. boundary closest to high sensitivity receptors) as the routine. The location of the monitoring points will be determined based upon the wind direction and the location of dust generating activities being undertaken on Site / off Site at the time.

All visual monitoring is recorded in the daily logbook and made available to NRW as required. Details recorded include (as a minimum):

- Weather conditions (qualitative wind speed, direction, rainfall), sourced from publicly available data from the nearby Milford Haven meteorological recording station.;
- Any non-standard site operations;
- Identification of any significant dust on site or dispersion beyond the site boundary; and
- Additional mitigation measures put in place, if required.

A visual dust monitoring check-sheet is provided in appendix D as an example, although use of this sheet is not mandatory. An increase in the frequency and scale of visual monitoring will be undertaken where:

- Particularly dusty conditions are detected on site by operational staff;
- Dust emissions are evident near the boundary during any activity;

- The Site Manager identifies a period of adverse meteorological conditions (i.e. prolonged dry periods and or low wind speeds blowing towards sensitive receptors); and/or
- In response to complaints being received – in this situation off site monitoring will also be carried out at locations in proximity to where the complaint was received.

The results of the visual dust monitoring will be monitored by the Site Manager (or suitably trained delegated persons). Where it is identified that significant dust levels are present on-site, or dust is visible beyond the Site boundary, Site Manager will ensure that the appropriate mitigation measures are adopted in response. In the event that visual dust monitoring identifies dust being transported beyond the Site boundary and mitigation measures fail to resolve the issue, all dust generating activities will cease until the source of the dust has been identified and steps taken to prevent the off-site emissions.

In the event that continuous offsite dust emissions are detected (i.e. more than 2 days in a row) alongside complaints being received by members of the public, correspondence with NRW will be undertaken to discuss subsequent steps.

It is not proposed to undertake any visual dust monitoring outside of the operational hours of the Site. However if monitoring was specifically required outside of the operational hours, a third-party monitoring company could be commissioned to undertake monitoring.

5.1.2 Responsibility for Implementation

A suitably trained Site Manager (or suitably trained delegated persons) is on Site during operational hours who is responsible for the implementation of dust management measures where required. Responsibilities are allocated to specific personnel to ensure dust generation is effectively controlled as outlined in Table 5-1 below.

Table 5-1: Dust Management Responsibilities

Actions	Responsibility
Monitoring meteorological forecast	Site Manager (or suitably trained delegated persons)
Routine (weekly) visual dust monitoring	Site Manager (or suitably trained delegated persons)
Routine monthly visual dust monitoring	Site Manager (or suitably trained delegated persons)
Coordinating plant area cleaning	Site Manager (or suitably trained delegated persons)
Application of plant dust suppression	Site Manager (or suitably trained delegated persons)
Completing dust event forms	Site Manager (or suitably trained delegated persons)
Liaison with public and regulator	Site Management Team
Coordinating dust management plan updates	Site Management Team

Actions	Responsibility
*The procedure for the Site Manager (or suitably trained delegated persons) to review feedback from visual monitoring will be to review the visual monitoring record in the Site Logbook.	

All personnel on Site understand their responsibility to ensure the generation of dust is minimised. Each employee is made aware of the importance of dust control and the most effective measures available to minimise such emissions either as part of the induction process, or as a specific training exercise. Training incorporates the following aspects:

- Waste types that can be accepted at the Site, as outlined within the Site's permit;
- Key activities with the highest potential for dust generation;
- Methodology of visual dust assessments;
- Importance of unofficial visual dust assessments during everyday work and how to report visible dust emissions;
- How to respond to a complaint from a member of the public;
- The complaints protocol and escalation method;
- What to do in the event of a dust emission incident, and who to inform;
- The importance of the DEMP, its 'active' format and its location;
- Any dust monitoring methods incorporated on Site at the time;
- Overview of the prevailing winds and how this affects daily operations;
- Key aspects to look out for during routine operations with regard to dust generating activities;
- Cleaning regime on site (routine and intermittent);
- Regime of maintenance of onsite plant;
- Routine measures that can be incorporated into daily work schedules to minimise dust and emissions (i.e. no idling, minimise drop heights, traversing across base of stockpiles, covering of loads); and
- Additional measures that can be undertaken to minimise dust and emissions (i.e. notification of relevant person visual dust plumes are identified, remedial actions).

Refresher training will be provided every two years.

5.2 Complaints Procedure

Complaints may be notified to the Site Manager (or suitably trained delegated persons) either during or after an event, by the complainant or indirectly through a regulator who was notified. Complaints will be reported to the relevant authorities by the operator and will include the following (recorded in the Site Logbook):

- Date, time, and name of complainant (if given);
- Nature of complaint;
- Locality of complaint; and

- A summary of investigation and actions taken and outcome.

Complaint response will have the objective of investigating the incident and preventing any continuing issue by putting in place additional control or management measures to prevent re-occurrence of incident and updating the DEMP. Complainants will be informed of findings of investigation and actions taken.

Investigations will include but not be limited to:

- Visit by Site Manager (or suitably trained delegated persons) to the location of the complainant to verify issue (if the complaint is made 'after' rather than 'during' a dust event this may not be possible);
- Review of Site activities at the time of the incident to investigate potential sources;
- If a dust event is occurring, or a recurring event, undertake more frequent on-site monitoring and instigate off-site visual monitoring and record findings;
- Review of control measures and management actions at time of incident;
- Review of meteorological conditions at time of incident; and
- Reporting of findings in the Site Logbook.

All complaints will be acknowledged within 2 working days and a response provided in line with the council's Complaints Procedure. An example Dust Event Form is included in Appendix B. Where a number of complaints are received (or recurring complaints are received), the complaints investigation would be escalated to the Site Management Team, who will lead an investigation seeking to rectify the issue at the earliest opportunity. The Site Management Team may engage the services of a specialist contractor to investigate where appropriate.

5.3 Engagement with the Community

The Site Manager (or suitably trained delegated persons) will act as liaison with the regulator and local community for issues relating to dust nuisance.

The nominated representative will respond promptly to all complaints by undertaking an investigation into the dust event, including weather conditions, operations on Site and mitigation measures in place at the time of the complaint.

Complainants will be informed of the investigation.

Following the receipt of a complaint, the details of the complaint will be recorded (an example of a compliant record form is presented in Appendix C), a Dust Event Form will be completed, and the results of the subsequent investigation kept in the Site Logbook.

Appendix A: Accepted Waste Types

The dust potential of the different types of material have been determined in reference to SLR's experience at similar sites across the UK. The dust potential of material is often linked to the moisture content of material; the higher the moisture content the lower the dust potential.

Table A-1: Dust Potential of Waste Types

Material Type	Storage Area Location	Approximate Maximum Storage Volume (m^3)	Associated Dust Potential
Food Waste (bay)	WTS: within Recycling Building	25	Negligible
Food Waste (skip/trailer)		110	
Loose Film		98	Negligible
Cardboard		130	Negligible
Paper		130	Negligible
Loose Paper Bay		150	Negligible
Baled Cardboard		160	Negligible
Loose Cardboard		120	Negligible
Baled Aluminium		70.2	Negligible
Baled Plastic		115.6	Negligible
Baled Steel		115.6	Negligible
Baled Cartons		115.6	Negligible
Red Bag (mixed recyclables)		310	Negligible
Baled Carpets	WTS: sheltered external bays	210	Low
Wood		230	Low
Mattresses		216	Negligible
Rigid Plastic		120	Negligible
Glass Bay		135	Medium
Tyres Bay		230	Negligible
Scrap Metal Bay		230	Negligible
UPVC Bay		230	Negligible
Baled Plastic Film Bay		210	Negligible
Residual waste	WTS: within Residual Waste Building	650	Low
AHP (bay)		220	Negligible
AHP (skip/trailer)		110	Negligible
DMR[4]		196.0	Negligible

[4] With the introduction of Workplace Recycling Regulations, the DMR waste stream will become segregated commercial waste. Since the Local Authority currently collect mixed recyclates, and due to the initial uncertainties around the implementation date/method, the storage bay for this stream is shown on the site plans as DMR. Once the new legislation is live and material is collected separately, the

Material Type	Storage Area Location	Approximate Maximum Storage Volume (m^3)	Associated Dust Potential
Residual Waste	WRC: external bays/skips/ containers	50	Low
Green Waste		30	Low-to-Medium
Books		1	Negligible
Cans and Plastics		1	Negligible
Cardboard		25	Negligible
Carpets		20	Low
Furniture - Reusable		30	Negligible
Furniture – Non – Reusable		30	Negligible
Flo Tubes		<1	Negligible
Gas Bottles		Bottle cage	Low
Inert/ Rubble		20yd3 skip	High
Litter Recycling (Bulking)		1	Low
Mattresses		30	Negligible
Mixed Glass		15	Medium
Newspapers & Magazines		25	Negligible
Paints		30	Negligible
Paper		1	Negligible
Plastic – Hard/Rigid		30	Negligible
Plasterboard		30	Medium
Scrap Metal		30	Negligible
Tetrapaks		1	Negligible
Textiles/ Clothing/ Shoes		1	Negligible
Tyres		30	Negligible
WEEE – CRT		TV Stillage	Negligible
WEEE LDA and Fridge Freezers		30	Negligible
WEEE SDA		15	Negligible
Wood/ MDF		30	Low
UPVC		30	Negligible

current DMR bay will become a contingency bay/a bay for other future materials, and the remaining material will be distributed amongst their respective bays – the capacity modelling took into account some future changes.

It is noted that there can be a great deal of variation in the dust potential between loads of received green material. Green waste loads can be composed entirely of either new growth (with a low/negligible dust potential) or brittle and aged material (with a moderate dust potential).

Appendix B: Dust Event Form

Staff Details	
Name of author:	
Event notified by:	
Description of event:	
Date:	
Time:	
Investigation Details	
Activities taking place during time of event:	
Dust mitigation techniques employed at time of event:	
Summary of weather conditions leading up to and during the event:	
Details of corrective actions:	
Notes:	
Closure	
Site Manager (or suitably trained delegated persons) review date:	
Site Manager (or suitably trained delegated persons) signature, to confirm no further action required:	

Appendix C: Dust Complaint Form

Complainant Details	
Complainant Name:	
Address and postcode:	
Complainant contact details (telephone/ email):	
Date & time of complaint:	
Complaint reference number:	
Complaint details:	
Investigation Details	
Investigation carried out by:	
Investigator position/role:	
Date & time of investigation:	
Weather conditions at time of complaint and investigation:	
Wind speed and direction at time of complaint and investigation:	
Investigation findings:	

Feedback given to NRW and/or local authority?	
Date feedback given:	
Feedback given to complainant and/or public?	
Date feedback given:	
Review and Improve	
Improvements needed to prevent a reoccurrence:	
Proposed date for completion of required improvements:	
Actual date of completion (to be filled in once completed):	
If proposed date for completion of improvements was missed, state why:	
Does the dust management plan need updating?	
Date that the dust management plan was updated (if applicable):	
Closure	
Site Manager review date:	
Site Manager signature (to confirm no further action required):	

Appendix D: Visual Dust Monitoring Check-sheet

Background Information			
Person Undertaking Survey (& Position)			
Date:		Time:	
Description of Wind Strength (i.e. strong, gusty)			
Wind Direction			
Weather observations (i.e. sunny/overcast)			
Ambient temperature (degree Celsius)			

Survey Results			
Monitoring location (to be defined based upon wind direction)		Observations	
ID	Description (i.e. boundary)	Airborne dust visible on Site?	Airborne dust visible beyond Site boundary?
1		Y/N	Y/N
2		Y/N	Y/N
3		Y/N	Y/N
4		Y/N	Y/N
5		Y/N	Y/N
6		Y/N	Y/N
7		Y/N	Y/N
8		Y/N	Y/N
Dust visible on-site or beyond boundary?			
If dust visible, identify potential source(s):			

If dust is visible beyond the site boundary, or significant levels of dust are observed at the Site, the following remedial measures should be considered:	
Good housekeeping	Reduce dust emissions resulting from events such as overspill of stockpiles onto access roads through cleaning/sweeping.
Minimising of drop heights	Reduce the drop height of material to reduce resuspension of dust.
Enforcement of Site speed limit	Ensure vehicles adhere to the 10mph site speed limit to reduce resuspension of dust.
Vehicle sheeting	Ensure vehicles have sheeting in place covering loads upon arrival to and exit from the Site.
Dust Suppression	Suppression measures should be adopted to wet down stockpiles or surfaces to reduce dust emissions.
Temporary cease of operations	If adopted mitigation measures are not effective, a temporary cease to those operations may be required
This is not an exhaustive list of measures.	

Summary of mitigation measures adopted (also fill in a Dusty event form)

WRAP's vision is a thriving world in which climate change is no longer a problem.

Our mission is to make the world a more sustainable place. We bring people together, we act on the facts, and we drive change.

Find out more at
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