

Berth 31 Barry Docks

DRAFT Dust Monitoring & Management Plan



2nd August 2024



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DMMP Status

This DMMP is complementary to details on plant and operations etc, which are not duplicated in the DMMP. The DMMP is intended to be a live document which serves as a reference during daily operations, and as such will be reviewed at least annually and updated where necessary or on a more frequent basis should the following occur:

- Significant* changes are made to the plant or operational practices;
- the Regulator requests that the DMMP 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 DMMP.

[*Examples of significant changes are described in each section of this DMMP, as relevant to those plant or operational practices]



1 Introduction

Dust and Emissions Management Plan

- 1.1 This document provides the Dust Monitoring and Management Plan (DMMP) focusing on particulate emissions (dust)¹ for wood recycling operations at Berth 31, Barry Docks. The facility has a Standard Rules Permit for which an application is being made to Natural Resources Wales (NRW) for a bespoke environmental permit for an increased area and a higher annual tonnage.
- 1.2 The DMMP forms part of the wider environmental management control system at the site which ensures site operations meet legislative requirements and operates to high environmental standards. The DMMP aims to minimise dust emissions and outlines the actions to be taken if staff identify a dust issue, following a complaint by third parties or arising from comments from the NRW as a result of a site inspection.
- 1.3 The DMMP is a living document subject to on-going review, with updating as appropriate.

Site Operations

1.4 SWWP receives waste wood to process by sorting and sizing to customer specifications for a variety of uses such as board manufacture and biofuels. The primary site activities which have the potential to generate emission issues, with particulates that may generate dust in dry and windy weather, are the unloading, processing, transfer/movement and loading of wood waste. The site covers an area of approximately 4.25 hectares.

Site Location

- 1.5 The site is located at Berth at Barry Docks CF63 4AB, as shown in Drawing AQ1.
 - The OS Grid Reference for the site is: 313003, 168144; and
 - The OS Grid Reference for the site access: 313100, 168268
- 1.6 The site is situated within the Barry Docks complex and is accessed on the site's north eastern boundary through lockable gates onto an internal docks road (Wimborne Road) with access to/from the public highway via the docks entrance joining the Ffordd Y Mileniwm. The site is not

¹ The DEMP does not provide for odour or NOx. In terms of odour the nature of the waste and operations do not give rise to issues of odour. Vehicle emissions are the primary emission source of NOx and noting the site's location and the surrounding land uses, the impact on NOx levels is considered to be negligible.



located in an Air Quality Management Area (AQMA) nor has any other environmental designations over it.

Dust - Pathway

- 1.7 Dust is made of fine particles of solid matter. Dust emission is the process by which the dust becomes airborne. Once dust is created and becomes airborne this is the pathway for dust to be transmitted from its source to receptor. Potentially air currents can disperse it over a wide area and dust emissions can impact sensitive equipment, machinery, nearby land uses, soils, water systems, fauna and flora and give rise to the potential to cause complaints.
- 1.8 The significance of this pathway i.e. level of dispersal/dilution of dust emissions is dependent on atmospheric conditions the most significance of which is the wind, its speed and direction. The presence of physical barriers is also important in terms of the level of dust dispersal/dilution as these can to prevent/impede carriage.
- 1.9 The size and density of the dust particles can also influence the distance travelled from the source of emission. Typically deposition rates decrease significantly and approximately logarithmically with increasing distance from source.

Receptors

- 1.10 The site location in relation to nearest dust sensitive receptors (existing and proposed) are shown in Drawing AQ1.
- 1.11 The closest existing residential receptors are houses to the west of Ffordd Y Mileniwn and the railway line approximately 300m away. Additionally planning consent has been granted for further residents in the old railway siding between Ffordd Y Mileniwn and the railway line. This is approximately 180m from the parking and storage area of the site.
- 1.12 Receptors are workplaces associated with the surroundings docks, the closest being the Construction Hub, a training centre for the construction industry, and general industrial units including Barry Biomass to the south west further along the dock. Additionally to the north east is the extensive Dow plastics factory. To the north of the parking and storage area are three water bodies referred to as Barry Ponds and run as an angling business.
- 1.13 Magic Maps confirms : Hayes Point to Benrick Rock, Geological SSSI 850m to the south, Barry Island Geological SSSI 1.7km to the south west, Cogs Moor SSSI 2.7km to the east. Barry





Woodlands 2.0km to the north, Severn Estuary SPA, Sully Island 3.5km to east, south east. Severn Estuary SAC 5.9km to the east.

Other Dust Generating Operations

1.14 The site is located immediate adjacent to a construction material training hub, but no specific other dust generating activities have been identified.

Wind Speed and Direction

1.15 The closest observation station to the extension area is located at Cardiff (Rhoose) Airport. A wind rose five years for all wind speeds is presented in Figure 1. It can be seen that the majority of winds are from the west with winds from these sectors (250°–310°) occurring for 35.4% of the year.



Figure 1 – All winds: Cardiff Observation Station (5 years)

1.16 This is particularly the case for the strongest winds which have the highest potential for dust release. A five year wind rose relating to winds above 5m/s is presented in Figure 2. On this basis, locations to the east of the site have the highest potential for dust impacts, which is the direction away from residents to the north of the Port of Barry.





Figure 2 – Winds >5m/s: Cardiff Observation Station (5 years)







2 Site Operations

Waste Deliveries

- 2.1 All waste is delivered to the site by road typically in articulated trailers with walking floors. The EMS details the procedures for acceptance of loads onto the site.
- 2.2 Wastes delivered to the site come in the operators own or contracted transport vehicles. All incoming loads are delivered either sheeted or fully enclosed. All deliveries are for materials to pre-determined waste specifications.
- 2.3 Records are kept of vehicle movements bringing and removing waste from the site, including copies of waste transfer notes. Vehicles report to the site weighbridge office on arrival at site.

Overview of Waste Activities

- 2.4 The specified waste management operations include:
 - **R3** Recycling/reclamation of organic;
 - R4 Recycling/reclamation of metals and metal compounds; and,
 - **R13** Storage pending operations under R1 to R12
- 2.5 Waste types accepted to the site are detailed in the Permit. The waste types are considered higher risk in terms of potential for dust generation.
- 2.6 The site operations involve the sorting, shredding with removal of metals and screening of preselected waste types to meet set specifications with onwards transportation of the final product.
- 2.7 Processing will generally take place in the southern end of the site as this location benefits from shielding from the 8m high earth bund on the site boundary and the Maltese crosses.





Mobile Plant and Equipment

2.8 The plant and equipment used at the site is detailed in table 1. All plant is maintained, as a minimum, in accordance with manufacturer's specification.

Table 1: Processing Plant and Equipment

Item	Function	
Shredders/Chipping / Trommel	Processing	
Screener	Processing	
Loading Shovels	Loading/unloading/movement	
Excavator	Loading/unloading/movement	
Weighbridge	Weighing of loads	

Table 2: Dust Suppression Equipment and Infrastructure

ltem	Application and Location of Use	
Tractor and water bowser with rain	Unloading of wastes	
gun attachment	Dampening down surfaces across site	
Remote Control Dust Mister	Using shredder in processing area	
Boundary netting (<mark>xm high)</mark>	*****	

Water Supply

2.9 A static water tanks, with a total capacity of 1,000,000 litres, capture surface waters to provide a source of water for dust suppression. The tank can be topped up as necessary, via mains or dock waters, to ensure they are full and available for use.





3 Dust and Particulate Management

- 3.1 Sources of dust and their management to minimise emissions are outlined below. With the exception of wet conditions, when the operation dust control measures is not considered necessary, many of the controls will operated throughout the working day however for certain mitigation measures their operation will depend on the prevailing site conditions at the time. All site operatives will have to comply with these requirements as relevant to conducting their site duties. Triggers for the operation of certain dust control measures are provided for, see section 4 paras 4.3 to 4.6.
- 3.2 All staff have been trained in the dust management measures including identifying when dust is or is going to become an issue and they are responsible for deployment of the relevant appropriate measures in the course of their site duties. In addition the site manager will regularly review dust management during the course of the day, again in direct relation to prevailing weather conditions and site operations with increased frequency during dry and windy conditions if the implementation of the dust control measures in line with this DMMP are not sufficient to stop visible plumes of dust escaping beyond the site boundaries.

Dust Controls: Vehicle Movements and Machinery

- 3.3 Dust from the movement of machinery and vehicles on site will be reduced or controlled by:
 - All access roads, storage and processing yard areas are concreted;
 - The access roads, storage and processing yard areas being washed or dampened with water twice a day or at an increased frequency see para 3.13;
 - Operational surfaces will be kept free of accumulated dust/fibres;
 - Spillages on access areas will be cleared up immediately;
 - Vehicle speeds will be reduced to 5 mph or below;
 - Idling of vehicles and machinery prohibited;
 - Plant will be kept clean to avoid a build-up of mud or dust on the machine which may be dropped on roads and, later, cause wind-blown dust; and,
 - Prior to leaving site, any vehicles which have materials adhering to external surfaces which may have the potential to wind-blown dust, will be cleaned.





Dust Controls: Processing

- 3.4 Dust from the processing of material will be reduced or controlled by:
 - Waste acceptance procedures to avoid accepting dusty loads or loads with high amounts of fines²;
 - Processing plant operated to minimise generation of fine material to comply with product specification;
 - Reducing drop heights of conveyors;
 - Use of water suppression equipment when processing;
 - Processing plant site take advantage of shielding from topography and also adjacent structures; and,
 - Processing plant to be re-orientated as appropriate to site conditions to minimise potential for windblown dust from machinery;

Dust Controls: Movement of Material

- 3.5 In addition to the general measures for vehicle movements the further measures will be operated for the movement of wood as follows:
 - Application of water as unloading waste with tanker/bowser or mister
 - Loading of vehicles with mister operating in dry and high windy conditions
 - Material loaded into vehicles will not be placed higher than the vehicle sides.
 - Any spillages during loading will be clean up as part of routine housekeeping measures.
 - Full enclosure/sheeting of vehicles upon loading.

Dust Controls: Storage

- 3.6 In addition to the above, measures to reduce dust emissions from storage is provided for as follows:
 - Waste acceptance procedures to avoid accepting dusty loads or loads with high amounts of fines;
 - Limiting processing to minimise stock of processed material on site at any one time; and,
 - Application of water to stockpiles when conditions have the potential to generate windblown dust from stockpiles surfaces.



² A dusty load would have >10% fines material and staff training in WAP would include identification of dusty loads.



3.7 These dust controls will be applied at all times bar the final bullet point with the application of water to stockpile only required in dry conditions with high winds which have the potential to result in windblown dust outside the site boundaries. All site operatives involved in accepting material to site will have to comply with acceptance procedures and site management will be responsible for ensuring minimal stock levels of processed materials and deciding when water is to be applied to stockpile to prevent off site windblown dust.

Dust Controls: Boundaries

3.8 Provision will be made for additional dust suppression on the north eastern site boundary with the provision of two mobile dust cannons. The range of the cannons are sufficient to provide coverage along the full length of this boundary, see Appendix A for specification. The dust cannons can be operated by remote control. The dust cannons will be operated during the working day subject to weather conditions notably precipitation levels and wind strength and direction. Whilst the site manager and site staff will assess their operation, surveillance of live CCTV feeds of the site will allow the dust cannons to be activated remotely if required.

Dust Control: General

3.9 The following general measures will also be operated at the site as part of the DMMP:

- Appropriate personal protective equipment will be used to minimise personal risk.
- Toolbox talks on use of dust suppression equipment and general management of dust.
- Operatives required to call water bowser to their location if dust is arising where they are working.
- Waste and product stockpiles will not exceed the optimum for effective site operation and dust management.
- A bowser³/road sweeper⁴ will be used on all engineered surfaces.
- A policy of good housekeeping will be adopted such that all ground and relevant mechanical surfaces⁵ will be kept free of accumulated dust/fibres.
- Loads identified as potentially problematic (i.e. containing fine, loose materials⁶) will not be accepted at the site or deposited on site.



³ The bowser will be used a minimum of twice a day when it is not raining or ground conditions are wet.

⁴ A road sweeper will be brought to site twice a week and is not dependant on weather conditions.

⁵ Mechanical Surfaces refers to the surfaces of the on site mobile plant.

⁶ A dusty load would have >10% fines material and staff training in WAP would include identification of dusty loads



- Should there be a failure in any site infrastructure, plant or equipment as detailed in this DMMP that gives rise to an unacceptable risk of dust emissions off site, then the relevant operations will cease until either appropriate repairs or alternative contingency mitigation measures are undertaken to ensure effective control of dust emissions as determined by the TCM.
- A Daily Dust Inspection record to be maintained. (Appendix B)
- For the purpose of this DMMP 'Wet Conditions' are when it is raining or ground and stockpile surfaces are damp.
- For the purpose of this DMMP 'Dry Conditions' are when ground and stockpile surfaces are no longer sufficiently moist to prevent fine material becoming airbourne.
- The site manager (and/or deputy) will be responsible for identifying a change between wet and dry conditions that require the restarting of dust control measures.
- On site weather station system providing continuous monitoring of weather conditions with automatic alerts relating to wind direction and speed.
- 3.10 These dust controls will be applied throughout the working day bar the use of the bowser in wet weather conditions. All site operatives must comply with the above as relevant to their site duties. Site management will be responsible for assessing additional mitigation in conditions arising as outlined in the last two bullet points.

Contingency

3.11 Should the measures above not prove sufficient to prevent problems with windblown dust offsite the site manager will increase the frequency of the use of the bowser over the part of the site identified as the source of the dust. This may include the use of an additional (second) water bowser. Dust cannons will also be available to be employed on the dust source. Consideration will be given to the use of temporary screens to provide a physical barrier to contain dust at the point of its arising.

Cessation of Operations

3.12 If all dust control measures have been deployed but dust is still deemed problematic, i.e. dust is readily evident escaping beyond the site boundaries, then the relevant site operations causing the dust will cease until climatic conditions have ameliorated or additional controls become available.





4 Monitoring

Responsibility

4.1 Monitoring of dust at the site is the responsibility of the Technically Competent Manager (TCM) and any person(s) authorised by the TCM who have undertaken training in this procedure. One of these persons must be present on site at all times.

Visual Inspection

4.2 The TCM will undertake visual monitoring inspections of the site boundaries. The visual monitoring inspections will take place twice daily or more frequently if conditions indicate this may be necessary. All observations and any subsequent actions will be recorded in the site diary.

Routine Monitoring

- 4.3 The TCM will ensure dust management measures are undertaken as appropriate to the site operations and weather conditions. Weather conditions will be continuously monitored and recorded with an on-site, fully calibrated weather station, figure 3 overleaf provides an example of the information to be recorded using a Skylink weather station system which will be used at the site.
- 4.4 Site operations will also continuously recorded with close circuit television cameras across the site which can be cross referenced to the real time weather conditions recorded by the site weather station.
- 4.5 The continuous monitoring of the weather station gives real time information on changes to conditions allowing the TCM to review and amend accordingly dust management measures at the time. This will be triggered by automatic text alerts from the weather station of to the TCM and the out of hours security guard. Text alerts can be set for automatic notifications at certain wind conditions.
- 4.6 The text alerts for certain weather conditions will require specific site dust management actions including cessation of operations to be brought into operation. During the first year of operation the appropriate settings for alerts and associated management controls will be defined and incorporated into the DMMP, see Appendix C. Initially this will be set in the first month of operation with ongoing reviews at 3 months, 6 months and 12 months. Thereafter to be reviewed annually or as per section 6.





Figure 3: Weather Station Information



Current Weather for SWWP Winkleigh: Issue Date Aug 27th 15:30 GMT





Out of hours

4.7 There is always an onsite presence with a patrolling security guard when the site is not operational. It is not anticipated that dust controls will be required as there will be no moving vehicles or plant operations and at the end of a shift the surfaces of stockpiles will be left in a damp condition to form a 'crust' to prevent windblown dust from stockpile surfaces. However the security guard will also receive the automatic weather notifications and be required to keep dust generation under review as part of his regular site patrolling and CCTV monitoring and notify the out of hours site contact (site manager/deputy/TCM) to assess the situation and the need for onsite attendance to instigate dust control measures.





5 Actions

General

- 5.1 The day to day measures to manage dust will be carried out using the equipment and measures as detailed in sections 3 and 4. Where site monitoring identifies there is an incident with unacceptable dust emissions the following actions will be undertaken:
 - 1. Establish source;
 - 2. Are there any unusual characteristics evident in the waste on-site (origin of waste, composition, age, condition, etc)?
 - 3. Are/were waste reception processes occurring as per normal?
 - 4. Is/was the dust suppression system working?
 - 5. Are/were there any unusual activities taking place off-site e.g. neighbouring site operations?
 - 6. Cease relevant operation
 - 7. Recommence relevant operation only when actions have been taken to address dust emissions e.g. additional suppression measures, suitable weather conditions, etc
- 5.2 Should several complaints be received at site during the same working day contingency arrangements will be deployed and the site manager will assess the need to cease operations.
- 5.3 All incidents will be fully investigated and recorded by the TCM including details of any amendments to plant/procedures, mitigation or remedial actions taken to avoid future incidents with details recorded in the site diary.





6 Reporting and Complaints Response

Community Relations

6.1 SWWP's site management will liaison with any community stakeholders such as organisations as the local council in response to any issues raised by them in respect of emissions. In the first instance liaison will be with the docks operator (Associated British Ports).

Complaints

- 6.2 Any dust complaints will be fully investigated and recorded by including details of any mitigation or remedial actions taken as per the procedures in the environmental management system.
- 6.3 When a dust complaint is received the following actions will be taken by the TCM or nominated substitute:
 - Establish if justified if wind blowing in direction of property, dust seen leaving site (conditions such as rain or wind blowing in opposite direction would indicate not justified).
 - Where justified establish source and:
 - Are there any unusual characteristics evident in the waste on-site (origin of waste, composition, age, condition, etc)?
 - > Are/were waste reception processes occurring as per normal?
 - > Is/was the dust suppression system working?
 - Are/were there any unusual activities taking place off-site e.g. neighbouring site operations?
 - > Cease relevant operation
 - Recommence relevant operation only when actions have been taken to address dust emissions e.g. additional suppression measures, suitable weather conditions, etc
- 6.4 The original complainant will be informed of the outcome of the investigation of the complaint by the Site Manager and any actions taken within 5 working days.





Review

- 6.5 The TCM will review the site diary⁷ in relation to dust matters together with any complaints, NRW inspection records, any monitoring results and available weather station information. The results of review shall be used to assess the need for changes to the DMMP including amending site procedures and further monitoring work if necessary.
- 6.6 Notwithstanding the above, the DMMP will be reviewed annually by the site manager and TCM or otherwise in response to a request from a relevant statutory body e.g. NRW, changed circumstances such as the operation of new processing plant or substantiated dust complaints.

Management

- 6.7 Management of dust at the site is the overall responsibility of the TCM who is responsible for the day to day management of the site including the DMMP, its implementation and review.
- 6.8 All site operatives will be informed of the contents of this DMMP and receive appropriate training. Site operatives will be responsible for implementing measures in the DMMP as relevant to their site duties.







Appendix A – Dust Cannon Specification

WLP 700 Pole Dust Cannon (Remote Control)



WLP reserves the right to make changes at any time and without notice.











Appendix B – Inspection Sheet

Wood Recycling at Berth 31 Barry Docks Dust Daily Inspection Checklist (AM/PM)

Date:	
Name:	

Item	Inspection	Check	Action Required
Weather AM	Wind direction/strength		
	Wet/dry		
Weather PM	Wind direction/strength		
	Wet/dry		
Site Boundaries	Excessive dust escaping boundaries		
	Evidence of dust outside site		
Housekeeping	Roads clear of spillages/debris/litter		
	Storage layout as per permit plan		
Dust Cannon(s)	Fully operational		
	Maintenance up-to-date		
Processing Plant	Cleaned at end of shift		
	Maintenance up-to-date		
Tanker & Bowser	Fully operational		
	Maintenance up-to-date		
Water supply	Access to water supply clear		
	Tanks maintained minimum 75% full		





Appendix C – Weather and Processing Related Dust Actions

The weather conditions for text alerts and provisions in this section will be established during first year of operation (initial at 1 month, 3 months, 6 months and 12 months and thereafter subject to annual review and or in relation to site experiences (changes in processing operations or substantiated complaints)

Weather Conditions	Operations	Actions
No wind with frost, fog, mist, snow or wet/rainy	All operations	No dust mitigation required
conditions. No text alert		
Dry conditions no wind. No text alert	Processing operations (Shredding) and handling	Dampen material prior to processing/handling
	(unloading and loading)	
Light winds from NW/N Text Alert @ wind XXmph	Processing operations: Shredding	Operation of additional mister and/or water bowser
Moderate winds from NW/N Text Alert @ wind	Processing operations: Screening	Operation of mister and/or water bowser
XXmph		
Strong winds from NW/N Text Alert @ wind XXmph	General site operations	Increased frequency of dampening of roadways
		(hourly) during working day
Gale conditions Text Alert @ wind XXmph	Processing (shredding and screening) and handling	All operations bar unloading to cease
	(loading)	
Storm conditions Text Alert @ wind XXmph	All operations	Operations ceased





02/08/2024







