South West Wood Products Ltd

Kings Dock, Swansea Docks, Swansea

Dust & Emission Management Plan

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Land & Mineral Management

Notice

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Contents

Drawings

Reference	Title
LMM 061 02	Site Layout

Figures

Table

Appendices

1 Introduction

Dust and Emissions Management Plan

1.1 This document provides the Dust and Emissions Management Plan (DEMP) focusing on particulate emissions (dust)[1] for wood recycling operations at Kings Dock, Swansea Docks, Swansea operated by South West Woods Products Ltd (SWWP) under environmental permit no. EPR/CB3495FF issued by Natural Resources Wales (NRW).

1.2 The DEMP 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 DEMP 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 DEMP is a living document subject to on-going review, with updating as appropriate.

Site Operations

1.4 SWWP takes wood wastes at Kings Dock 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.

Site Location

1.5 The address for the site is:

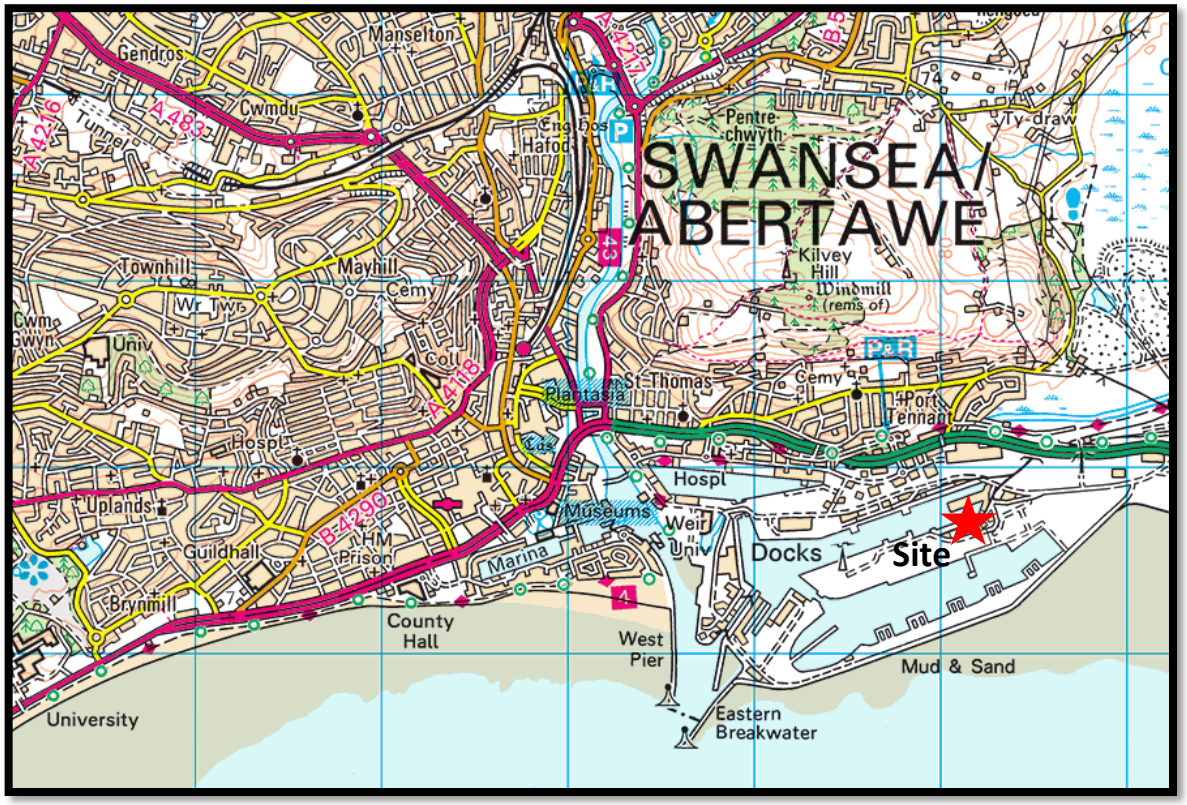
South West Wood Products Limited
Kings Dock
Swansea
SA1 8QT

1.6 The OS Grid Reference for the site is: SS 68164 92683. The site covers an area of approximately 2.5 hectares.

[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. Should an odour issue be identified at the site this DEMP will be up-dated to include measures to address odours. 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.

1.7 Kings Dock site is located wholly within the Swansea Docks complex to the south east of the centre of Swansea, see Figure 1. Kings Dock is found in the administrative local government area of Swansea Council. The site is not located in an Air Quality Management Area (AQMA) nor has any other environmental designations over it.

Figure 1: SWWP's Site Location (nts)



Dust - Pathway

1.8 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.

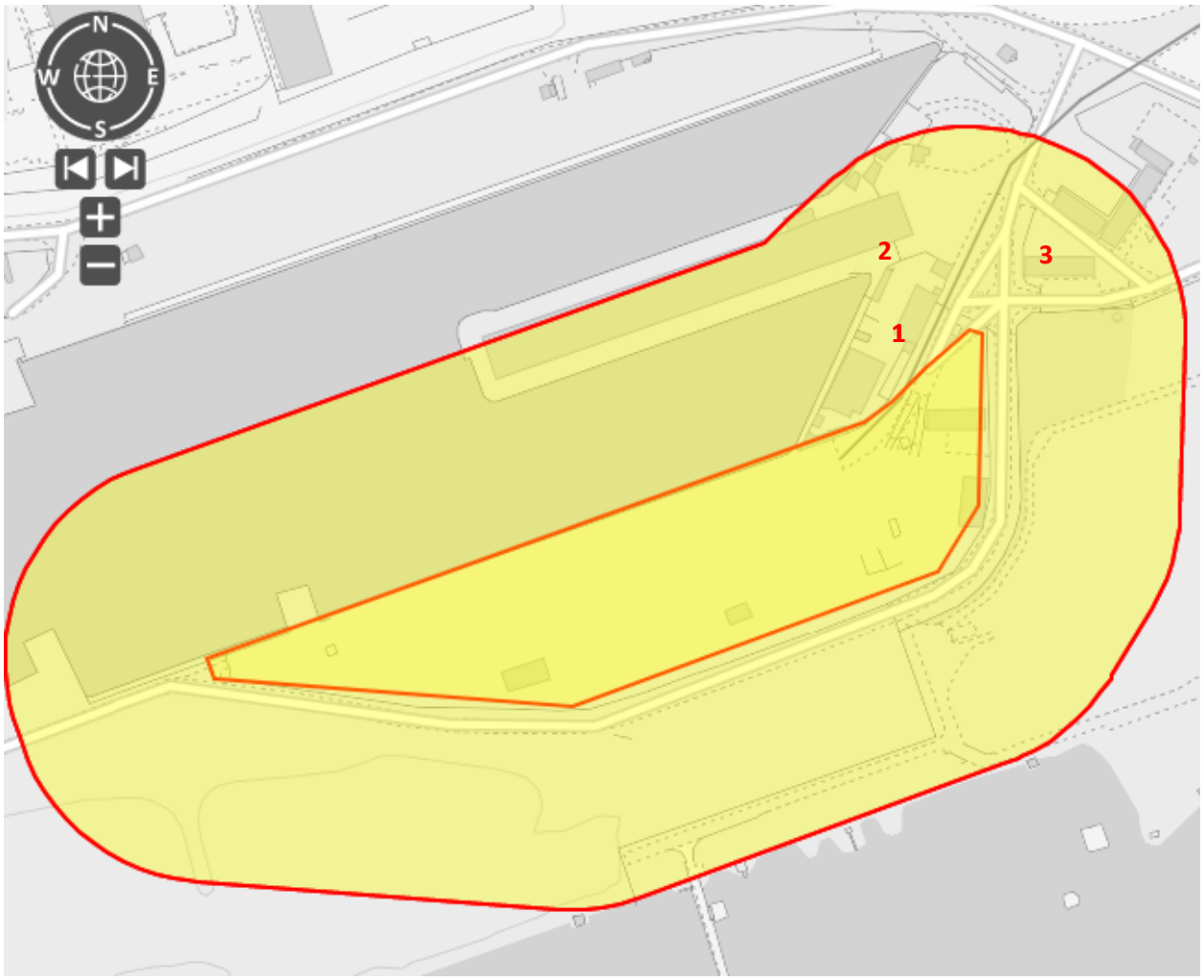
1.9 The significance of this pathway i.e. level of dispersal/dilution of dust emissions is dependent on atmospheric conditions the most significance of which is the wind, its speed and direction. The presence of physical barriers is also important in terms of the level of dust dispersal/dilution as these can to prevent/impede carriage.

1.10 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

1.11 The distant for close receptors is considered to be within 100mand following guidance documents published by the Institute of Air Quality Management, see Appendix A. The closest external receptors for dust are shown at distances of <100m in Figure 2 and <400m in Appendix B.

Figure 2: Location of Potential Dust Receptors (250m radius from site boundary)



1.12 The closest receptors are workplaces associated with the docks and include the Trinity House Lighthouse Service (1) to north east and just beyond that is found Premier Cement Ltd (2) then a bit further east is an open yard storage operation. The majority of the surrounding land been vacant dockside or the waters of Kings Docks itself. The workplace receptors are

considered to be of medium sensitivity noting the IMA guidance, see Appendix B. Residential areas are considered to have a high sensitivity but there is only a small residential area just within the 400m of the site, the IMA guidance categorises a receptor between 200m to 400m as 'distant'.

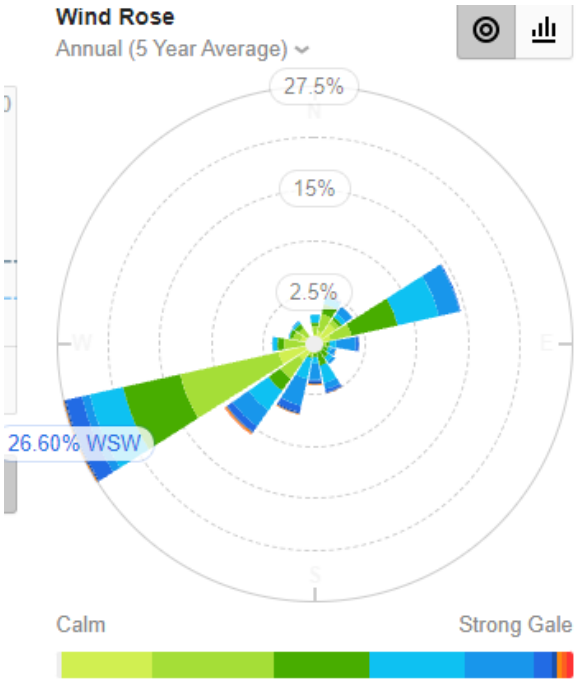
Other Dust Generating Operations

1.13 The site is located immediate adjacent to a number of activities which themselves have the potential for significant dust generation with the cement operations and also the dockside coal/stone storage areas on the dockside immediately opposite the site.

Wind Rose

1.14 The realised severity of dust emissions for external receptors, without site management/mitigation practices, is dependent on prevailing meteorological conditions as determined by location, macroclimate and site specific micro-climate. Wind speed and direction are of particular significance for dispersing dust. The wind rose for Swansea Docks, see Figure 3, indicates that the greatest proportions of winds are from the west to south west.

Figure 3: Wind Rose Port Eynon Point(Mumbles Head 9.9miles west of site)



1.15 Considering the proximity and the prevailing wind direction specific measures are included in this DEMP to mitigate dust impacts to Trinity Lighthouse workplace., see table 2 and para 3.11.

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 at Kings Dock include:

- **R3** Recycling/reclamation of organic materials;
- **R4** Recycling/reclamation of metals;
- **R13** Storage pending operations under R1 to R12

2.5 Waste types accepted to the site are detailed in Appendix C. The waste types are considered high risk in terms of potential for dust generation.

2.6 The site operations involve the sorting, shredding with removal of metals and screening of pre-selected waste types to meet set specifications with onwards transportation of the final product.

2.7 The plan no. LMM 061 02 Rev A shows the site layout. Processing will take place just towards the western of the site near the processed pile as this location benefits from shielding from adjacent piles and is remote from downwind receptors.

Mobile Plant and Equipment

2.8 The processing 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 2 specifically lists the equipment for dust suppression.

Table 1: Processing Plant and Equipment

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

Table 2: Dust Suppression Equipment and Infrastructure

Item	Application and Location of Use
Tractor and water bowser with rain gun attachment	Unloading of wastes Dampening down road surfaces across site
Bespoke dust suppressor machine	On site dust suppression
Hood to be fitted on the end of the shredding machine	To capture plastic and paper wastes before they are blown around the site and beyond the boundary
Larger 2,600 Gallon tankers to hold water for dust suppression	Use in mobile suppression units for unloading of wastes and dampening down road surfaces across site
3 x Static water storage tank (1,800,000 litres total capacity) for dust suppression	To provide water supply for dust suppression equipment across the site.
Double length canopy for providing shelter during loading of 2x 40ft HGV's	To be located at loading bays and provide a wind shelter for the crane and vehicles during loading operations
Remote Control Dust Mister	Using shredder in processing area

Water Supply

2.9 Three static water tanks, with a total capacity of 1,800,000 litres, capture surface waters to provide a source of water for dust suppression. The tanks can be topped up as necessary, via mains or dock waters[2], to ensure they are full and available for use.

[2] Any water abstraction will not exceed 20cubic metres per day.

3 Dust and Particulate Management

3.1 Sources of dust and their management to minimise emissions are outlined below and a table with the source pathway and receptor details is presented at the end of this section, table 3. With the exception of wet conditions, when the operation dust control measures is not considered necessary, many of the controls will operated irrespective throughout the working day however for certain mitigation measures their operation will depend on the prevailing site conditions at the time. 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 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 DEMP 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 haul roads and open yard areas are hardsurfaced (concreted);
- The roads and operational open yard areas being washed or dampened with water twice a day or at an increased frequency see para 3.13;
- Roads and operational open yard surfaces will be kept free of accumulated dust/litter/fibres;
- Spillages on roads will be cleared up immediately;
- Vehicle speeds will be reduced to 5 mph or below;
- Idling of vehicles and machinery prohibited;
- Processing plant to be re-orientated as appropriate to site conditions to minimise potential for windblown dust from machinery;

- 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.

3.4 These dust controls will be applied through the working day irrespective of weather conditions, with the exception of washing/dampening which will not take place in wet conditions. All site operatives will have to comply with these requirements as relevant to conducting their site duties.

Dust Controls: Processing

3.5 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 fines[3];
- 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 located at western end of site to maximise distances to downwind sensitive receptors;
- Processing plant to be re-orientated as appropriate to site conditions to minimise potential for windblown dust from machinery; and,
- Shredding machine to operate with protective hood/screen and with use of dust suppression / dust canons to prevent litter from escaping and being blown across the site.

3.6 These dust controls will be applied through the working day whilst processing operational irrespective of weather conditions, with the exception of water dust suppression equipment

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

which will not be used place in wet conditions. All site operatives will have to comply with these requirements as relevant to conducting their site duties.

Dust Controls: Movement of Material

3.7 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 in 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;
- Loading operations to take place under the canopy and with use of dust suppression / dust canons; and,
- Full enclosure/sheeting of vehicles upon loading.

3.8 These dust controls will be applied through the working day whilst processing operational irrespective of weather conditions, with the exception of water dust suppression equipment which will not be used place in wet conditions. All site operatives will have to comply with these requirements as relevant to conducting their site duties.

Dust Controls: Storage

3.9 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;
- Application of water to stockpiles when conditions have the potential to generate windblown dust from stockpiles surfaces; and,
- Raised kerb/boundary to be instated at the perimeter to contain contaminated waste within the premises.

3.10 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

3.11 Provision will be made for additional dust suppression on the northern 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 D 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

3.12 The following general measures will also be operated at the site as part of the DEMP:

- 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 bowser[4]/road sweeper[5] will be used on all engineered surfaces.
- A policy of good housekeeping will be adopted such that all ground and relevant mechanical surfaces[6] will be kept free of accumulated dust/fibres.

[4] The bowser will be used a minimum of twice a day when it is not raining or ground conditions are wet.
[5] A road sweeper will be brought to site twice a week and is not dependant on weather conditions.
[6] Mechanical Surfaces refers to the surfaces of the on site mobile plant.

- Loads identified as potentially problematic (i.e. containing fine, loose materials[7]) will not be accepted at the site or deposited on site.
- Should there be a failure in any site infrastructure, plant or equipment as detailed in this DEMP 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, see Appendix E.
- For the purpose of this DEMP 'Wet Conditions' are when it is raining or ground and stockpile surfaces are damp.
- For the purpose of this DEMP '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.

3.13 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

3.14 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.

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

Cessation of Operations

3.15 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.

Table 3: Source, Pathway, Receptor

Source	Pathway	Receptor	Type of impact	Where relationship can be interrupted
Processing operations (shredding and screening)	Atmospheric dispersion then deposition and/or inhalation	Receptors described in DEMP para 1.11 and 1.12 and Appendix B.	Harm to health, visual soiling, nuisance and loss of amenity	Waste acceptance procedures to avoid dusty loads or loads with high fines contents. Plant re-orientated in response to site conditions, plant site remote from downwind receptors, conveyor drop heights minimised, water suppression equipment operated when processing.
Vehicles entering and exiting site Vehicle and plant movements around the site / Site surfaces	Atmospheric dispersion then deposition and/or inhalation	Receptors described in DEMP para 1.11 and 1.12 and Appendix B.	Harm to health, visual soiling, nuisance and loss of amenity	Minimise vehicle speeds on site (5mph limit). Use of a road sweeper. Dust suppression on site surfaces. Good housekeeping measures: roads and open yard areas to be kept clear of accumulated dust, litter and fibres; and, spillages to be cleared up immediately
Loading and Unloading of materials	Atmospheric dispersion then deposition and/or inhalation	Receptors described in DEMP para 1.11 and 1.12 and Appendix B.	Harm to health, visual soiling, nuisance and loss of amenity	Water applied as unloading. Water applied as loading in windy conditions. Material not loaded higher than vehicles sides. Drop heights minimised. Use of canopy to load vehicles under. Loading location remote from downwind receptors
Debris falling off vehicles	Atmospheric dispersion then deposition and/or inhalation	Receptors described in DEMP para 1.11 and 1.12 and Appendix B.	Harm to health, visual soiling, nuisance and loss of amenity	All loaded vehicles are sheeted or enclosed.
Storage Areas	Atmospheric dispersion then deposition and/or inhalation	Receptors described in DEMP para 1.11 and 1.12 and Appendix B.	Harm to health, visual soiling, nuisance and loss of amenity	Waste acceptance procedures to avoid dusty loads or loads with high fines contents and majority of storage of material in largest form. Limited storage of processed material. Application of water to surfaces of processed material in windy conditions. Boundary bund on west and southern boundaries providing shelter from prevailing wind. Stockpile layout to prevent wind tunnel effect.
Vehicle exhaust	Atmospheric dispersion	Receptors	Harm to health,	Compliance with regulatory controls and no idling of vehicles and

emissions	then deposition and/or inhalation	described in DEMP para 1.11 and 1.12 and Appendix B.	visual soiling, nuisance and loss of amenity	machines permitted.

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 to ensure no dust is escaping from the site. 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, see Appendix E for details.

Routine Monitoring

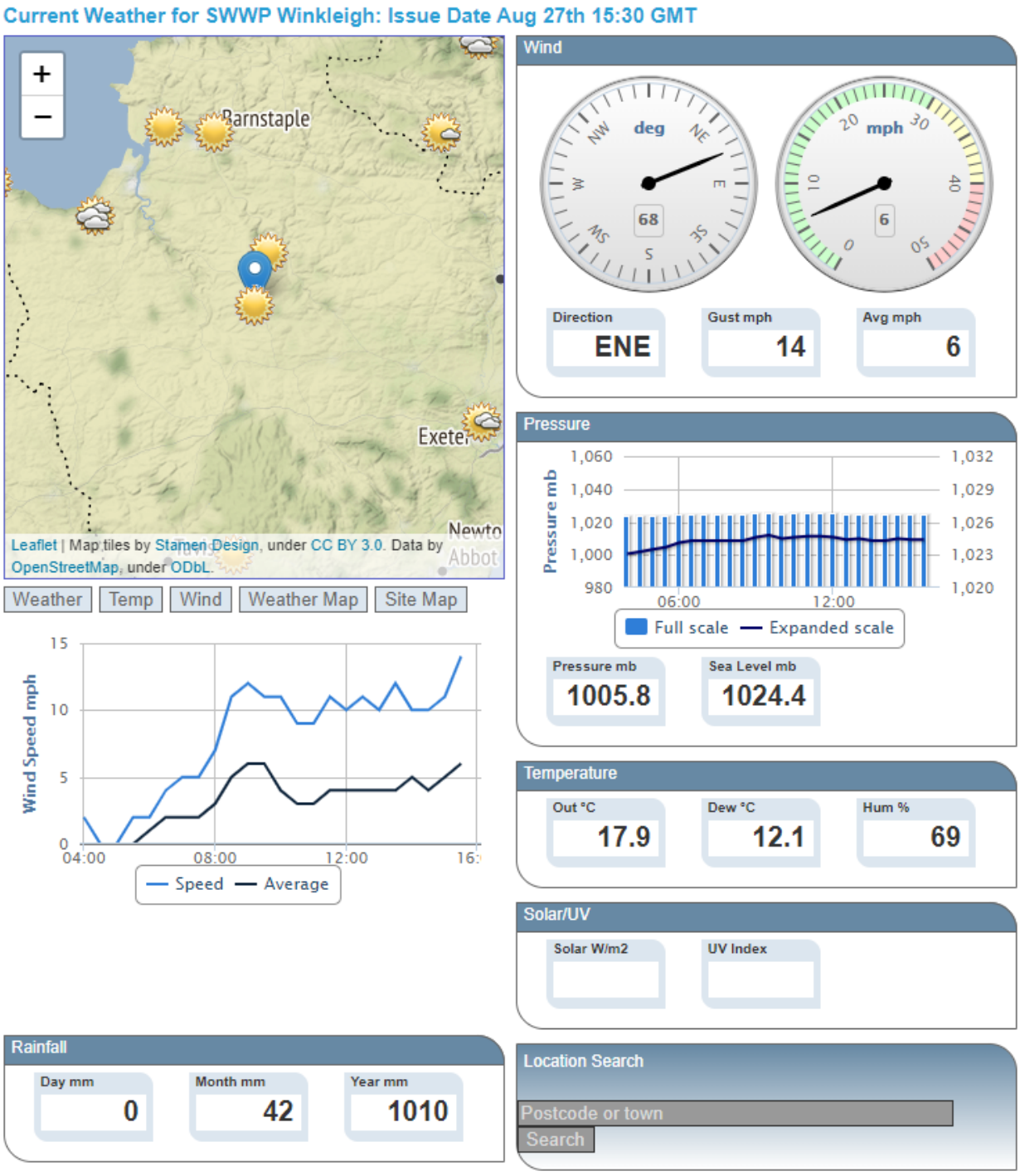
4.3 The TCM will ensure dust management measures are undertaken as appropriate to the site operations and weather conditions. Weather conditions will be continuously monitored and recorded with an on-site, fully calibrated weather station, figure 4 overleaf provides an example of the information to be recorded using a Skylink weather station system which will be used at the site.

4.4 Site operations will also continuously recorded with a comprehensive system of 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 e.g. winds from the west over 30mph processing operations to cease.

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 DEMP, see Appendix F. 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 4: Weather Station Information (example from another SWWP site)



Out of hours

4.7 There is always an onsite presence with a patrolling security guard when the site is not operational[8]. 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 processed 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.

[8] The typical hours of operation for processing at the site are 0600 Monday to 1600 Saturdays and 0800 to 1400 Sundays (shredding only between 0600 to 2200) but on occasion working may take place outside these hours to accommodate boat timings.

5 DEMP 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 2 and 3. Where site monitoring identifies there is an incident with unacceptable dust emissions the following actions will be undertaken:

- Establish source:
  - 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

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 in accordance with paras 3.14 and 3.15.

5.3 All incidents will 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 incidents of airborne dust off site or dust complaints will be fully investigated and recorded by the General Manager including details of any mitigation or remedial actions taken as per the procedures in the management system with the maintenance of the site diary, see Appendix G for a copy of the complaint form.

6.3 When a dust complaint is received the following actions will be taken by the General Manager or nominated substitute -

Immediate Actions:

- 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
  - 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 When complaints are received a complaint form will be completed. Complaints will be fully investigated and recorded by the General Manager including details of any amendments to plant/procedures, mitigation or remedial actions taken with details recorded in the site diary. The General Manager as part of environmental permitting responsibilities will ensure that the NRW is informed of these, ideally as soon as possible practically possible and appropriate. The

original complainant will be informed of the outcome of the investigation of the complaint by the General Manager and any actions taken within 5 working days.

Review

6.5 The General Manager will review the site diary[9] 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 DEMP including amending site procedures and further monitoring work if necessary.

6.6 Notwithstanding the above, the DEMP will be reviewed annually by the site manager 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 Technically Competent Manager (TCM) who is responsible for the day to day management of the site including the DEMP, its implementation and review.

6.8 All site operatives will be informed of the contents of this DEMP and receive appropriate training. Site operatives will be responsible for implementing measures in the DEMP as relevant to their site duties.

[9] The review of the site diary will assist with reviewing retrospective complaints to identify any circumstances which led to that complaint as a result of elements outside of the operator's control that would be able to be attributed (or, at least, in part) to the cause of the complaint.

Appendices

Appendix A – IAQM Sensitivity Guidance

IAQM Guidance on the Assessment of Mineral Dust Impacts for Planning 2016 v1.1

Box 3. Sensitivities of People to Dust Soiling Effects

For the sensitivity of people and their property to soiling, the IAQM recommends that the air quality practitioner uses professional judgement to identify where on the spectrum between high and low sensitivity a receptor lies, taking into account the following general principles:

High sensitivity receptor

- users can reasonably expect[a] enjoyment of a high level of amenity; or
- the appearance, aesthetics or value of their property would be diminished by soiling; and the people or property would reasonably be expected[a] to be present continuously, or at least regularly for extended periods, as part of the normal pattern of use of the land.
- indicative examples include dwellings, medium and long term car parks[b] and car showrooms.

Medium sensitivity receptor

- users would expect [a] to enjoy a reasonable level of amenity, but would not reasonably expect to enjoy the same level of amenity as in their home; or
- the appearance, aesthetics or value of their property could be diminished by soiling; or
- the people or property wouldn't reasonably be expected [a] to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land.
- Indicative examples include parks, and places of work.

Low sensitivity receptor

- the enjoyment of amenity would not reasonably be expected[a]; or
- there is property that would not reasonably be expecteda to be diminished in appearance, aesthetics or value by soiling; or
- there is transient exposure, where the people or property would reasonably be expected to be present only for limited periods of time as part of the normal pattern of use of the land.
- Indicative examples include playing fields, farmland (unless commercially-sensitive horticultural), footpaths, short term car parks[b] and roads.

[a] People's expectations will vary depending on the existing dust deposition in the area.

[b] Car parks can have a range of sensitivities depending on the duration and frequency that people would be expected to park their cars there, and the level of amenity they could reasonably expect whilst doing so. Car parks associated with work place or residential parking might have a high level of sensitivity compared to car parks used less frequency and for shorter durations, such as those associated with shopping or errands. Cases should be examined on their own merits.

Table A3-2. Categorisation of Frequency of Potentially Dusty Winds

Frequency Category	Criteria
Infrequent	Frequency of winds (>5 m/s) from the direction of the dust source on dry days are less than 5%
Moderately frequent	The frequency of winds (>5 m/s) from the direction of the dust source on dry days are between 5% and 12%
Frequent	The frequency of winds (>5 m/s) from the direction of the dust source on dry days are between 12% and 20%
Very frequent	The frequency of winds (>5 m/s) from the direction of the dust source on dry days are greater than 20%

Table A3-3. Categorisation of Receptor Distance from Source

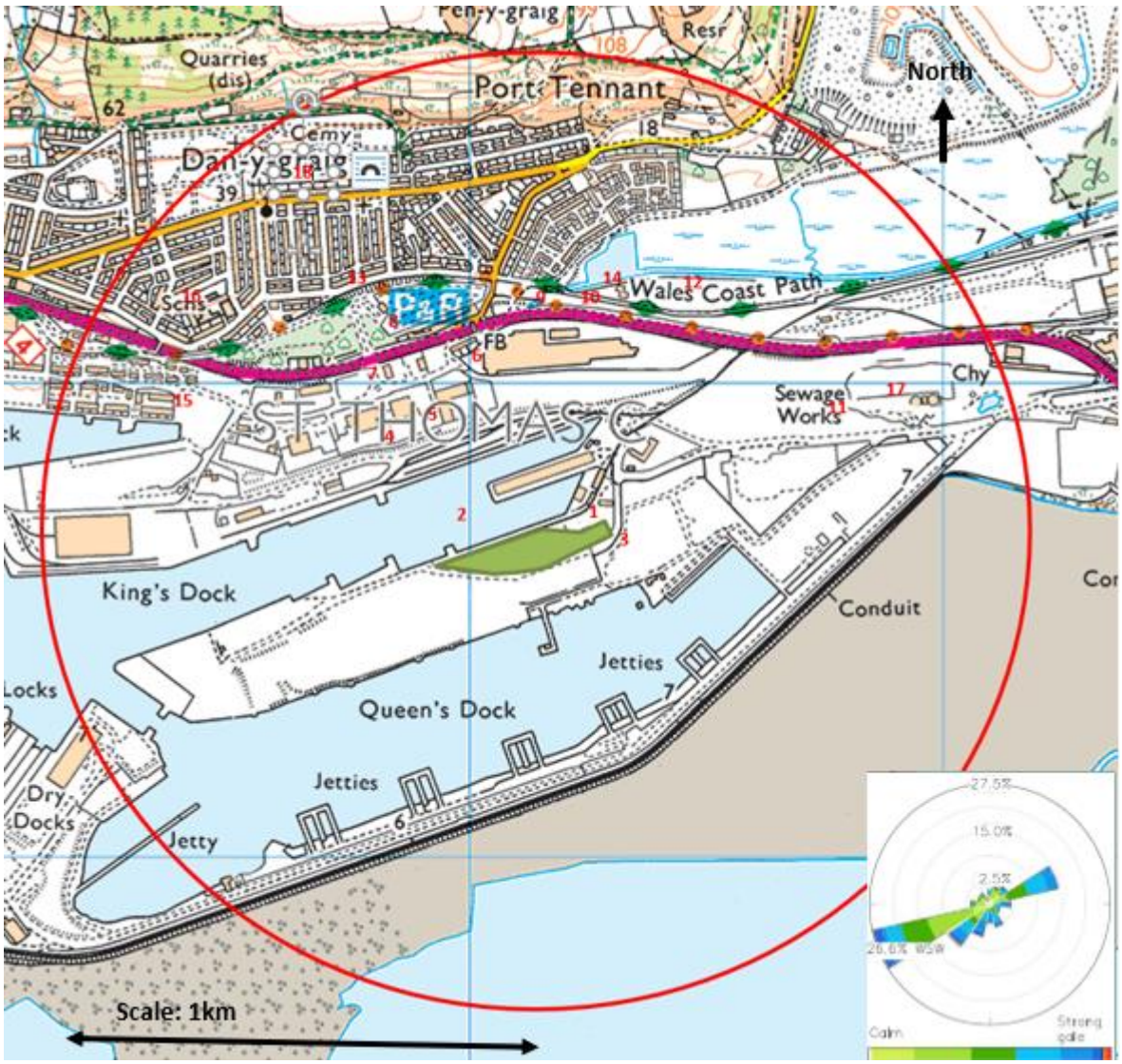
Category	Criteria
Distant	Receptor is between 200 m and 400 m from the dust source
Intermediate	Receptor is between 100 m and 200 m from the dust source
Close	Receptor is less than 100 m from the dust source

Appendix B – Sensitive Receptors

Sensitive Receptors

	Potential Receptor	Receptor Type	From Boundary of Permit	
			Distance (m)	Direction
1	Dockside Activities including storage and industrial operations	Industrial/Workplace	10- 1000m	North, South, East & West
2	Swansea Docks	Surface waters/Infrastructure	10m+	North, South & West
3	Internal dock roads	Private Infrastructure	10m+	North, South, East & West
4	Commercial and Retail Park	Infrastructure & Workplace	275m	North
5	Local Roads	Infrastructure	285m+	North
6	Bevans Road	Residential	385m	North
7	A483 Dual Carriageway	Infrastructure	430m	North
8	Park & Ride	Infrastructure	480m	North
9	Crymlyn Bog (SSSI, SAC & RAMSAR)	Surface Waters & Conservation site	495m	North East
10	Wales Coastal Path	Infrastructure	50mm	North
11	Wind turbines	Infrastructure	500m	East
12	Ashlands Playing Field	Recreation	505m	North
13	Port Tennant Estate	Residential	520m	North
14	Tennant Canal	Surface waters	595m	North east
15	Dockside Development	Residential	610m	North west
16	Dan y Graig Primary School	Community Infrastructure	675m	North west
17	Swansea Bay Waste Water Treatment Works	Infrastructure	725m	East
18	Dan y Graig Cemetery	Community Infrastructure	895m	North

Receptors Location Plan



Appendix C – Waste Types

EWC Code	Description
02 01 03	Wood and bark
02 01 07	Wood and bark
03 01 01	Wood bark and cork
03 01 05	Sawdust, shavings, cuttings, wood, particle board and veneer other than those mentioned in 03 01 04
03 03 01	waste bark and wood
15 01 03	wooden packaging
17 02 01	Wood
17 09 04	Mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03 (consisting of wood only)
19 05 01	Non-composted fraction of municipal and similar wastes (consisting of wood only)
19 12 02	Ferrous metal
19 12 03	Non - ferrous metal
19 12 07	wood other than that mentioned in 19 12 06
20 01 38	Municipal wood waste
20 02 01	wood and bark only

Appendix D – Dust Cannon Specification

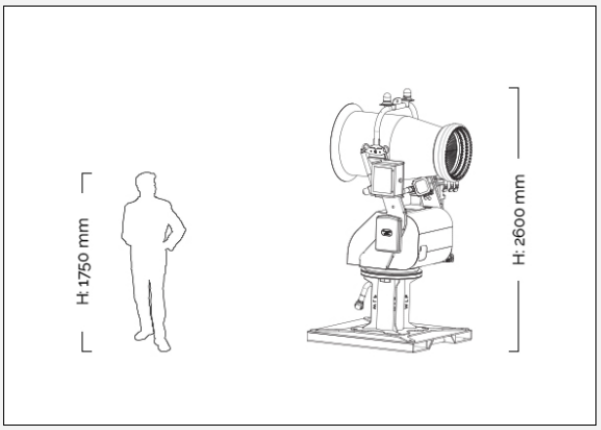
WLP 700 Pole Dust Cannon (Remote Control)

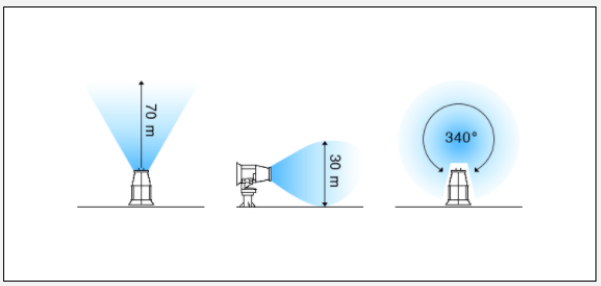
TECHNICAL SPECIFICATIONS OF WLP 700:

- **Throw distance**: 60-70 m
- **Rings of nozzles**: N. 3
- **Number of nozzles**: 150 (n. 50 for ring)
- **Type nozzles**: Standard Stainless Steel
- **Nominal fan power**: ~ 11 kW
- **Range of rotation**: 340°
- **Elevation**: -20° ÷ +45°
- **Hydraulic connection**: 1 ½ gas M
- **Electrical connection**: 400 V 50 Hz 3P+N+G 32 A
- **International protection rating**: IP 55
- **Noisiness**: < 93 Lwa
- **Water Filter/Filtration Grade**: Inox - 250 Micron
- **Water consumption (with 5, 10 and 15 gph nozzles)**:

BAR	6	9	12	15
MIN LITERS/MINUTES	15	18	21	23
MAX LITERS/MINUTES	88	108	125	139

- **Pressure**: Recommended 10/15 bar - maximum 35 bar
- **Optional**: radio - solenoid valve input - pump on board (Power: ~ 4 kW)





Appendix E – Inspection Sheet

Wood Recycling at Kings Dock, Swansea **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 F – Weather and Processing Related Dust Actions

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 conditions. No text alert	All operations	No dust mitigation required
Dry conditions no wind. No text alert	Processing operations (Shredding) and handling (unloading and loading)	Dampen material prior to processing/handling
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 XXmph	Processing operations: Screening	Operation of mister and/or water bowser
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 (loading)	All operations bar unloading to cease
Storm conditions Text Alert @ wind XXmph	All operations	Operations ceased

Appendix G – Complaint Form

Complaint Log:

Date of Incident		Time of Incident		Weather conditions at time of incident	
Date of Complaint		Time of complaint			
Name		Address		Contact details	
Complaint					

Signed:……

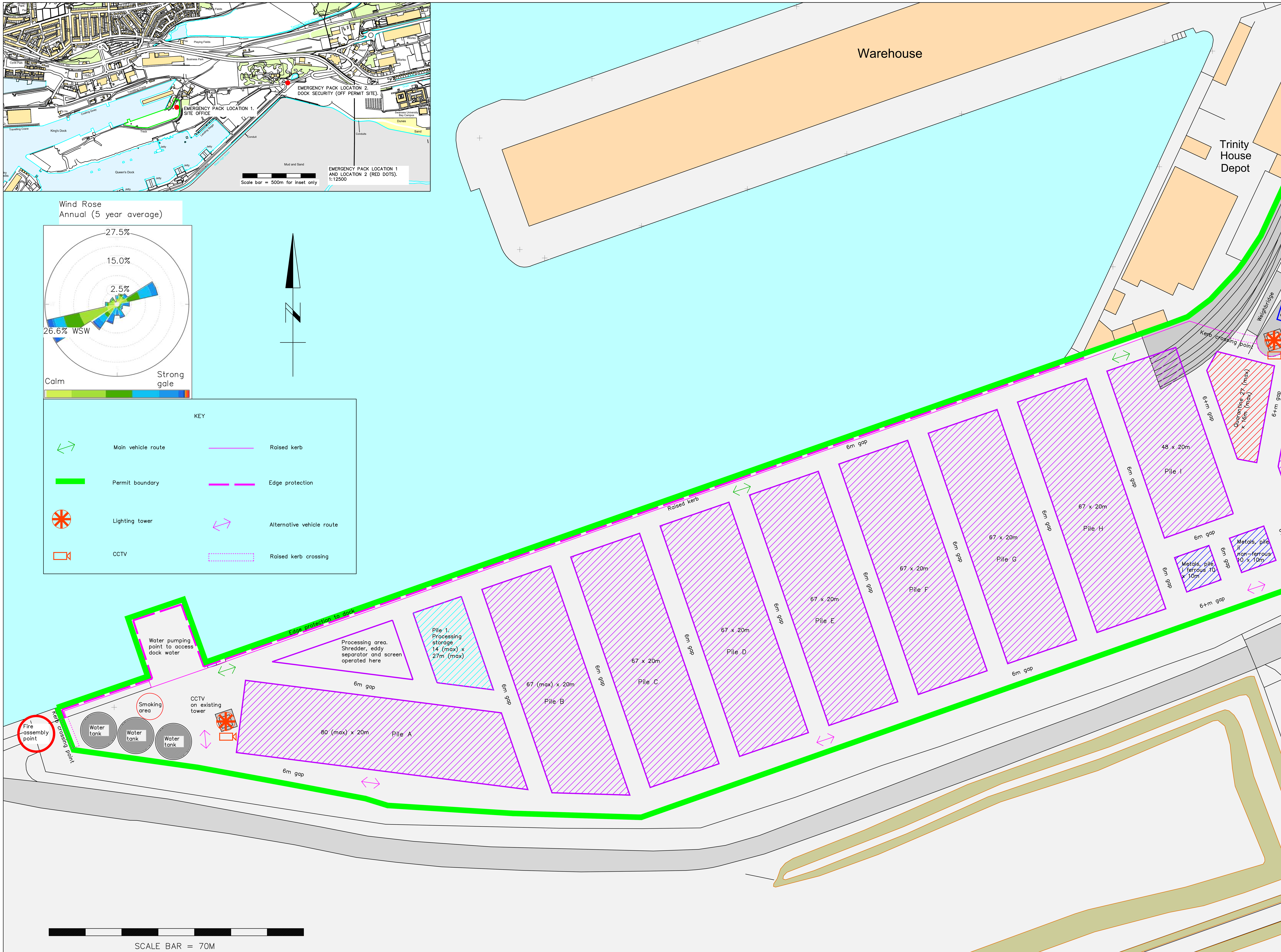
Details of Investigation				
Action Taken				
Future Actions				
Reporting[10]	Complainant	Site Staff	Management	NRW

Signed:…… (Site manager)

[10] Confirm date, verbal or written.

Drawings

Drawing LMM 061 02 – Site Layout



Notes:
1. This drawing should only be used for its original intended purpose.
2. Critical dimensions, levels, clearances etc. should be checked on site before construction work commences.
3. Dimensions in metres unless otherwise stated.

Revision	Comment	Date
A	Minor detail added	31 Jan 2023

South West Wood Products Ltd
Unit A4 Pacific Road, Compass Business Park, Cardiff CF24 5HL

Project
KINGS DOCK
SWANSEA

Drawing Title
PERMIT PLAN
EXTENT UPDATED APRIL 2022

Drawn Date: 10/04/22
Surveyed Date:

Scale: 1:500 MAINSHEET (AT A1)

Drawing Number: LMM/061/02
Rev: A