

AIR QUALITY MANAGEMENT PLAN

October 2020
J170589

QSSR Pty Ltd
Shoalhaven
Recycling

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Air Quality Management Plan

QSSR Pty Ltd

Shoalhaven Recycling

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Air Quality Management Plan

QSSR Pty Ltd

Shoalhaven Recycling

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1 BACKGROUND

1.1 Introduction

Greencap have been engaged by QSSR Pty Ltd (QSSR), trading as Shoalhaven Recycling to prepare this Air Quality Management Plan (AQMP) for the property located at 11 Victa Way, Bombaderry, NSW ('the Site'). This AQMP has been developed in consultation with QSSR based on an agreed scope to manage potential environmental air quality impacts as part of its obligations for the receiving, sorting and dispatching products from builder's construction waste under Development Approval DS20/1144 and NSW EPA Environment Protection Licence 20759 (EPL 20759).

It is acknowledged that QSSR also operate waste recovery operations on adjacent premises located at 8, 9 and 10 Victa Way that are also licensed under EPL 20759, however, the requirement for this AQMP is a specific condition of DS20/1144 that specifically relates to modification of the existing Development Approval (DA95/3102) for changes in the waste streams accepted at 11 Victa Way, as such this AQMP has specifically been written in relation to activities undertaken at 11 Victa Way.

1.2 AQMP Objective

The objective of this AQMP is to document the management measures required to manage the potential environmental air quality impacts associated with the activities undertaken at the Site, including:

- Ensuring that dust emissions from construction waste activities are minimised and appropriately controlled;
- Ensure that air quality impacts on surrounding residents, businesses are minimised;
- Keeping the local community and EPA informed of activities where required and responding quickly and effectively to issues or complaints;
- Where required, carrying out regular monitoring to ensure compliance against environmental air quality criteria; and
- Adequately manage and mitigate potential air quality impacts from operational activities.

For the management of potential Workplace Health and Safety impacts associated with air quality at the site, separate Safety Management Plans and an Operational Plan are in place, and are to be followed by all site personnel.

2 SITE DESCRIPTION

2.1 Site Location

The site is located at 11 Victa Way, Bombaderry, NSW (Lot10/DP617000) as is presented in **Figure 1**, and is currently occupied by an existing warehouse building, and a hardstand area.

2.2 Surrounding Land Uses

The site is an area zoned as 'General Industrial' (IN1) with immediate surrounding properties also zoned as General Industrial as outlined in **Table 1**.

Table 1 – Site Details and Immediate Surrounding Land Use

Property Description	Lot10/DP617000
Zoning	IN1 - General Industrial
Area	3,703m ²
Land Use North	IN1 - General Industrial (beyond Mulgen Creek)
Land Use East	IN1 - General Industrial
Land Use South	IN1 - General Industrial
Land Use West	IN1 - General Industrial



Figure 1: Site Location (Source: Nearmap)

Mulgen Creek runs directly to the north of the Site beyond which industrial properties are located. A train line is located directly beyond the adjacent properties to the east of the Site, beyond which are open fields used for agricultural purposes.

The nearest residential properties are located approximately 170m to the west on Meroo Road, 200m to the north on Alfred Street.

2.3 Local Weather

Based on climate data from 2000 to 2020 sourced from the Bureau of Meteorology (BoM) website for the nearest operational weather station, Nowra RAN Air Station AWS, located approximately 12 km southwest of the Site:

- The annual mean minimum temperature is 11.6 °C, and annual mean maximum temperature is: 22.5°C with January typically the hottest month with mean a monthly mean minimum temperature of 16.8°C monthly mean maximum temperature of 27.8°C; and July the coldest month with mean a monthly mean minimum temperature of 6.7°C monthly mean maximum temperature of 16.8°C °C;
- Mean Annual rainfall is 871.9mm, with February the wettest month with an annual monthly rainfall of 145.9mm and September the driest with an annual monthly rainfall of 40.7mm.
- Wind roses for 9am and 3pm observations indicate that the dominant morning wind directions for the Site are likely to be from the northwest, south and west with some seasonal variation; and the dominant afternoon wind directions for the Site are likely to be from east, southeast, northeast and south, with typically moderate wind speeds, with stronger but less frequent westerly and north-westerly winds occurring, particularly from April through to September. Wind roses of all 9am and 3pm observations from 2000 to 2020 for the Nowra RAN Air Station AWS are provided in **Appendix A**

2.4 Operational Overview

The Site accepts mixed builder's (construction) waste that is inspected, sorted and stored for transport off-site in accordance with *Standards for managing construction waste in NSW, 2018* with the processes outlined further below.

Covered trucks delivering mixed builder's waste enter the site via 10 Victa way after passing through the weighbridge where loads are inspected using a camera on a pole

Trucks then unload in the undercover unloading area that is wholly within the warehouse with a misting system in operation. The misting system creates a fine mist of water that is designed to suppress any dust generated through the handling of the mixed builder's waste.

Loads are then inspected again for any potentially dangerous or unacceptable materials. If accepted, the load is moved to the sorting area for sorting with the misting system in operation. In the sorting area, individual materials such as timber, cardboard, metals, plastic and concrete are separated and stored temporarily. Non-recyclable waste is temporarily stored inside the warehouse.

Once sorted, materials are temporarily stored in the warehouse and bulk stored out in the storage area in covered bins. When loading waste out in the outside loading area, the sprinkler system is activated to suppress any potential dust generated.

Segregated materials are then forwarded for further processing, reuse where possible with any residual waste not suitable for recycling or reuse (generally light wastes) baled transported for disposal at a landfill.

Plant and equipment used in site operations include:

- 2-tonne mini excavator;
- Front end loader;
- Forklifts (gas and diesel powered);
- 20-tonne excavator; and
- Trucks transporting waste and recovered materials to and from the site.

Waste cardboard processing and baling is also undertaken on the Site within the warehouse building. The bales are stored in the yard and dispatched to a cardboard recycling facility 3-5 times weekly as truck loads are filled.

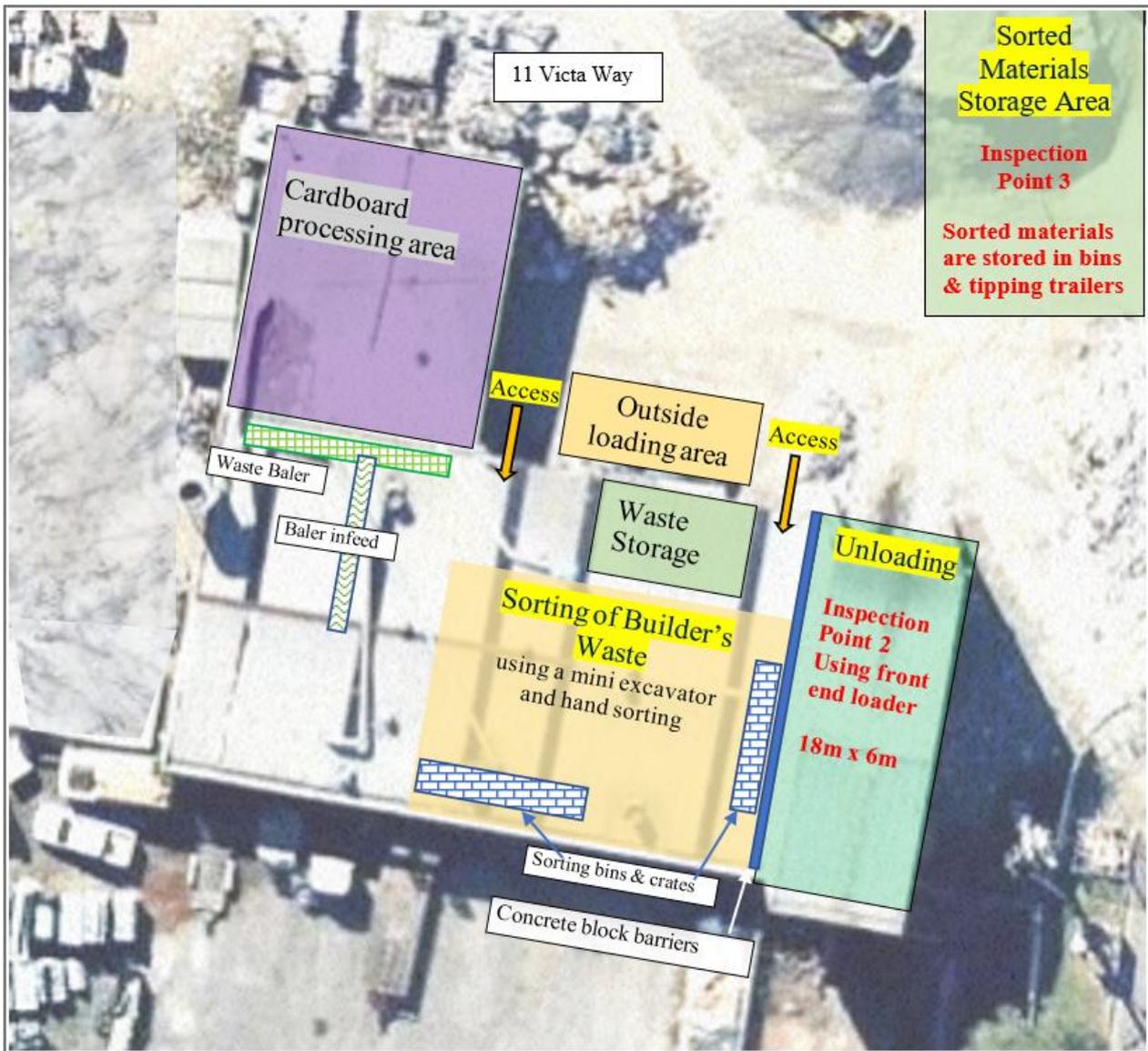


Figure 2: Site Layout

3 RELEVANT LEGISLATION AND GUIDANCE

The following legislation and guidelines are applicable to the management of potential air quality impacts on the site

- *Protection of the Environment Operations Act 1997*;
- *Protection of the Environment Operations (Clean Air) Regulation, 2010*;
- DoE 2016, *National Environment (Ambient Air Quality) Protection Measure (as amended in 2015)*, Department of Environment, Canberra;
- NERDDC 1988, *Air Pollution from Surface Coal Mining: Measurement, Modelling and Community Perception, Project No. 921*, National Energy Research Development and Demonstration Council, Canberra;
- NHMRC 1996, *Ambient Air Quality Goals Recommended by the National Health and Medical Research Council*, National Health and Medical Research Council, Canberra;
- NSW EPA 2016, *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales*; and
- NSW EPA 2017, *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.

4 AIR QUALITY MANAGEMENT

4.1 On-site Activities with Potential to Impact Air Quality

On-site activities that have the potential to cause air quality impacts include:

- Receiving and unloading of incoming mixed builder's construction waste;
- Sorting of the mixed builder's construction waste to recover individual products such as timber, concrete, metals, cardboard and plastic;
- Loading of truck and bins for dispatch with the sorted products and non-recoverable waste;
- Vehicle movements on the site across hardstand areas. This also includes vehicles using the weighbridge on the adjoining lot prior to accessing the site; and
- Exhaust emissions from plant and equipment used on site.

4.2 Other Factors Likely to Affect Air Quality Impacts

In addition to the inherent risks of specific construction waste activities (mentioned above) creating the potential to generate dust, consideration has been given to a number of other environmental factors likely to also affect the generation of dust emissions and extent of impacts, including:

- wind direction – determining whether dust, suspended particles or odours are transported from the source towards sensitive receivers;
- wind speed - governs the potential suspension and drift resistance of particles;
- rainfall or dew – rainfall or heavy dew that wets the surface of hardstand areas and reduces the risk of dust generation;
- evaporation and exposed surfaces – dries out the surface of hardstand areas and leads to increased risk of dust generation; and
- temperatures and upper air inversions – have the potential to trap colder air near ground level preventing upper-air mixing and the dispersion of odours.

4.3 Off-site Receptors

Potential off-site air quality receptors include:

- Surrounding commercial and industrial site users
- Occupants of residential properties located 170 to 200m and beyond to the north, northwest, west and southwest of the site.

4.4 Potential Offsite Dust Sources

The site is located in industrial precinct with other premises in the vicinity that have potentially dust generating activities, or with unpaved areas that have the potential to generate dust through vehicle movements include those listed in **Table 2**.

Table 2: Potential Off-site Sources of Dust

Business Name	Activity	Approximate Distance and Direction from the Site
Nowra Truck and Tractor Repairs	Vehicle Maintenance	Adjacent to Site - South
South Coast Track	Hydraulic and mechanical maintenance	90m - Northwest
Shoalbus Bus Depot	Parking for bus fleet	60m - North
Integra Packaging	Manufacture of timber pallets	Adjacent to Site - North
Welmec	Welding and mechanical repairs	80m - Southwest
Shoalhaven Council Northern Maintenance & Mechanical Service Depot	Servicing and maintenance of cars, trucks, mowers etc. Storage and loading of road maintenance materials.	120m - South
Shoalhaven Starches (Manildra Group)	Fermentation plant of grains to make starch. Coal fired boilers.	1.4km - South

4.5 Potential Offsite Odour Sources

Potential off-site sources of odours include:

- A milk processing factory located to the south east;
- Waste water treatment plant located to the southeast; and
- Shoalhaven starches located to the south.

The main sewer line also crosses the Site on the western side, odours have been noted to occur from a manhole cover in the location of a former pumping station on the western site boundary.

4.6 Key performance indicators

To evaluate the performance of the environmental management measures employed to minimise and dust for construction waste activities under this AQMP the following key performance indicators have been developed

- No dust or odour complaints within each 12 month period attributable to site activities.
- Dust suppression equipment remains functional with all maintenance and repair of the equipment achieved within a 24 hour timeframe;
- All monthly meetings held to review the Monthly Performance Report, with any recommendations relating to air quality management implemented within the following month;
- All new personnel working on site receive training in on-site environmental management for construction waste, including the requirements of this AQMP; and
- Complete Annual Review of this AQMP as part of the EPA Licence conditions.

4.7 Management Measures

The following management measures are in place to mitigate air quality impacts associated with site activities:

- All loads entering and leaving the Site are covered;
- Construction waste is unloaded, inspected and sorted wholly within the warehouse with misting system activated;
- Sorted materials are temporarily stored in the warehouse and bulk stored out in the storage area.
- The misting system is activated when waste is loaded out of the warehouse building to suppress any potential dust generated.
- Any mixed construction waste stored outside the building, is stored in covered bins;
- A shaker grid is in place where vehicles exit onto Victa Way after leaving the weighbridge on 10 Victa Way.
- Daily pre-starts are performed on all diesel and gas-powered plant and equipment to ensure any maintenance issues that have potential to cause excessive emissions are identified.

4.8 Air Quality Monitoring

Air quality monitoring at the site will utilise a two-stage adaptive management approach as outlined below:

Stage 1

Monitoring of air quality impacts will take place during daily site inspection undertaken as part of routine site operations and include:

- monitoring of weather conditions;
- odour monitoring;
- visual inspection of work activity areas and hardstand areas;

- daily visual surveillance of hardstand areas; and
- visual monitoring of mobile non-road diesel plant and equipment for excessive emissions during and start up and operation

If air quality monitoring indicates that mitigation measures are not fully effective or if dust or odour complaints are received during normal operation, QSSR will determine if additional air quality or dust mitigation controls are needed, amend the mitigation strategies in the AQMP accordingly, and promptly implement the additional air quality mitigation and controls measures and may include implementation of Stage 2 monitoring as outlined in the section below.

Stage 2

If deemed necessary, Dust Deposition Gauges (DDG) shall be installed in accordance with the EPA Approved Methods for Sampling and Analysis of Air Pollutants in NSW at nominated locations aimed to differentiate on-site dust concentrations from those from external sources (or background air quality). These shall be changed over monthly and taken to a NATA accredited laboratory for analysis. Monitoring data will include reporting of insoluble solids in accordance with the EPA publication “Approved Methods for the Modelling and Assessment of Air Pollutants in NSW”. Where any exceedances of deposited dust exceedance assessment criteria occur (refer to **Table 3**, in Section 4.9), a suitably qualified air quality consultant will be engaged to assess results to determine if they are likely to be caused by on-site activities.

Should the assessment indicate that exceedances of deposited dust criteria are likely caused by on-site activities, monitoring may be supplemented with a short-term program of continuous monitoring for PM10 and Total Suspended Particulates (TSP) will be undertaken using laser-based optical particle counters. The units will be web-enabled to allow for access to real-time data and establishment if there is a relationship between site activities, weather conditions and background air quality. The results of this monitoring will be used to establish additional air quality mitigation and control measures, that may include changes in site operational practices based on certain weather conditions.

All air monitoring equipment will be maintained and calibrated as required. Guidance from AS3580.1.1:2016 *Methods for sampling and analysis of ambient air; Part 1.1 Guide to siting air monitoring equipment* will be followed when setting up any air monitoring equipment and as indicated in **Appendix B** of this AQMP.

These shall be changed over monthly and taken to a NATA accredited laboratory for analysis. Monitoring data will include reporting of insoluble solids in accordance with the EPA publication “Approved Methods for the Modelling and Assessment of Air Pollutants in NSW”.

4.9 Air Quality Criteria

Stage 1

The results of daily inspection reports The Monthly Log Report will be reviewed by the management team. They will review dust and weather monitoring details, any incidents, site observation data which will highlight any trends and non-conformances of the criteria and analysis of a likely dust source. If monitoring results exceeds the KPI's of the AQMP and registers a non-conformance, the management team will review AQMP strategies and consider additional air/dust mitigation controls.

Stage 2

Where Stage 2 Air quality monitoring is implemented, the following criteria will be used to assess monitoring results:

Table 3: Air Quality Monitoring Assessment Criteria

Pollutant	Averaging period	Criteria ⁽¹⁾
PM ₁₀ ⁽²⁾	24 hours	50 µg/m ³
	Annual	25 µg/m ³
Total Suspended Particulates (TSP)	Annual	90 µg/m ³
Deposited Dust	Annual	2 g/m ² /month (increment)
	(rolling 12-month average)	4 g/m ² /month (total)

(1) Total Impact (incremental impact plus background)

(2) Airborne particulate matter

µg/m³– micrograms per cubic metre

g/m²/month – grams per square metre per month

PM₁₀ criteria sourced from DoE 2016

TSP criteria sourced from NHMRC 1996

Deposited Dust criteria sourced from NERDDC 1988

4.10 Complaints Management

The management of complaints is a requirement for the operation under the conditions of the Environmental Protection Licence.

QSSR have a dedicated phone number for complaints - (02) 4423 6817 which is included on the Shoalharbour Recycling website

Where a complaint, including dust or odour complaints is received by phone, email or in person the following details are recorded in a Complaints Register:

- Time and date of complaint
- Name and contact details of complainant
- Details of the nature of the complaint and any specific details relating to the nature of the complaint or time and date of any events that may be related to the complaint.

All complaints received are immediately reported to the General Manager for further follow-up and action if necessary.

Details of all complaints are reported to the NSW EPA as part of the Annual Licence Report.

4.11 Incident Management

Any incidents where work has been suspended due to increased dust, will be recorded on the daily/weekly run sheet. Weather observations will also be recorded and transferred to the monthly report log.

Any incidents where dust complaints occur following an incident will be managed by the Management Team and personal contact will be made to the complainant. If any clean-up is required it will be organised within 24hrs of the complaint. All details of the complaint and its resolution will be recorded and reported annually as part of the EPA licence requirements.

In the event of an emergency that has potential impact air quality the Shoalhaven Recycling Emergency Action Plan - SHR-WHS-006G should be followed. Details for external emergency response contacts are provided in **Table 4**.

Table 4: Emergency Response (external) Contact Details

CONTACT	STATE	LOCAL
POLICE	"000"	(02) 4421 9699
FIRE	"000"	(02) 4421 4754
AMBULANCE	"000"	1300 360 455
GAS	-	-
ELECTRIC	-	(02) 4423 0484
WATER	-	(02) 4423 0484
POISON	131 126	-
HOSPITAL	-	(02) 4421 3111
EPA POLLUTION HOTLINE	131 555	-

Internal contact details for emergencies are provided in SHR-WHS-006D Register - Emergency Contact Details

5 AIR QUALITY MANAGEMENT PLAN IMPLEMENTATION

5.1 Roles and Responsibilities

The daily operational responsibilities for the construction waste activities and AQMP management lay with the working Director Chris Hobbs and the site supervisor for the day.

This includes daily and weekly weather observations, site surveillance & inspection as well as responding to any complaints or responding to any incidents.

Responsibility for monthly reporting, data management, record keeping, training and communication lies with the management and administration staff under the direction of the General Manager.

5.2 Communication

Communication of the AQMP and its requirements to all personnel including contractors working on the site will be by via site inductions and also via toolbox talks as necessary.

Communication with all stakeholders and the community is important. The AQMP is available via the Shoalhaven Recycling website together with the PIMRP. Reference is made to its availability and location and that of the PIRMP for any public enquiries received. The company actively fosters relationships with nearby business and other sensitive receivers.

5.3 Staff and Contractor Training

To ensure the effective implementation of this AQMP, all personnel working on the site will undergo training relating to air quality management issues. This training will be included as part of the “Managing Construction Waste” Induction under the EPA regulation and includes:

- Requirements under this AQMP and the site’s PIRMP
- Incident Response, management, and reporting procedures
- Site induction requirements
- Location of environmentally sensitive receivers
- Environmentally Safe Work Methods (EWMS)
- Tool Box Talks – focused on environmental aspects

5.4 Reporting Requirements

Reporting requirements and responsibilities are outlined through this document for both internal management and external requirements under the site’s environmental licence (EPL 20759).

Reporting on air quality will include;

- Daily and Weekly run sheet that will include Daily / weekly site inspections, weather observations, incidents, workplace safety and maintenance
- Monthly Log Report – Reporting of any incidents where operations were suspended, complaints, operational maintenance, workplace safety, site inspections
- Dust Gauge Data (where Stage 2 air quality monitoring has been implemented)

The Monthly Log Report will be reviewed by the management team. They will review dust and weather monitoring details, any incidents, site observation data which will highlight any trends and non-conformances of the criteria and analysis of a likely dust source. If monitoring results exceeds the KPI’s of the AQMP and registers a non-conformance, the management team will review AQMP strategies and consider additional air/dust mitigation controls.

The monthly log report and review will be used to report annually as part of the EPA Annual Licence Report.

5.5 Audit and Continuous Improvement Review Processes

QSSR is committed to continuous improvement in all operations with the mindset of carrying out work smarter and safer for all employees.

Audits will be undertaken to assess the effectiveness of the Air Quality management measures, compliance with this AQMP, conditions of approval and other relevant approvals, licenses and guidelines. Beyond the outcomes of the QSSR monthly reporting reviews, audits will be carried out annually.

QSSR have a monthly reporting review as a tool. This will be used to assess and review performance of this AQMP. The AQMP will also be reviewed when:

This CEMP shall also be reviewed if:

- There is a significant change in the site’s operational practices;

- Air quality management controls are changed or upgraded
- There are significant and relevant changes in applicable legislation during the life of the project;
- A major incident or emergency event has occurred on the project site.

Based on the results of any audits or review of the AQMP, the AQMP will be updated as necessary.

If during the process of monitoring and review and continuous improvement of the AQMP, any revisions and/or changes to the AQMP will be distributed to all relevant internal and external stakeholders as well as updating the version on the Shoalhaven Recycling website.

Air Quality Management Plan

QSSR Pty Ltd

Shoalhaven Recycling

Appendix A: BoM Wind Roses

Rose of Wind direction versus Wind speed in km/h (28 Nov 2000 to 11 Aug 2020)

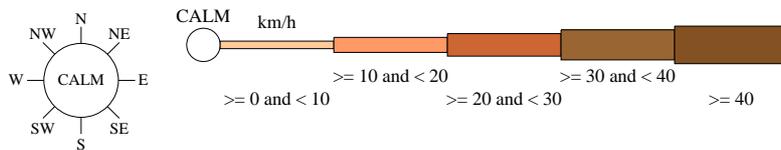
Custom times selected, refer to attached note for details

NOWRA RAN AIR STATION AWS

Site No: 068072 • Opened Nov 2000 • Still Open • Latitude: -34.9469° • Longitude: 150.5353° • Elevation 109m

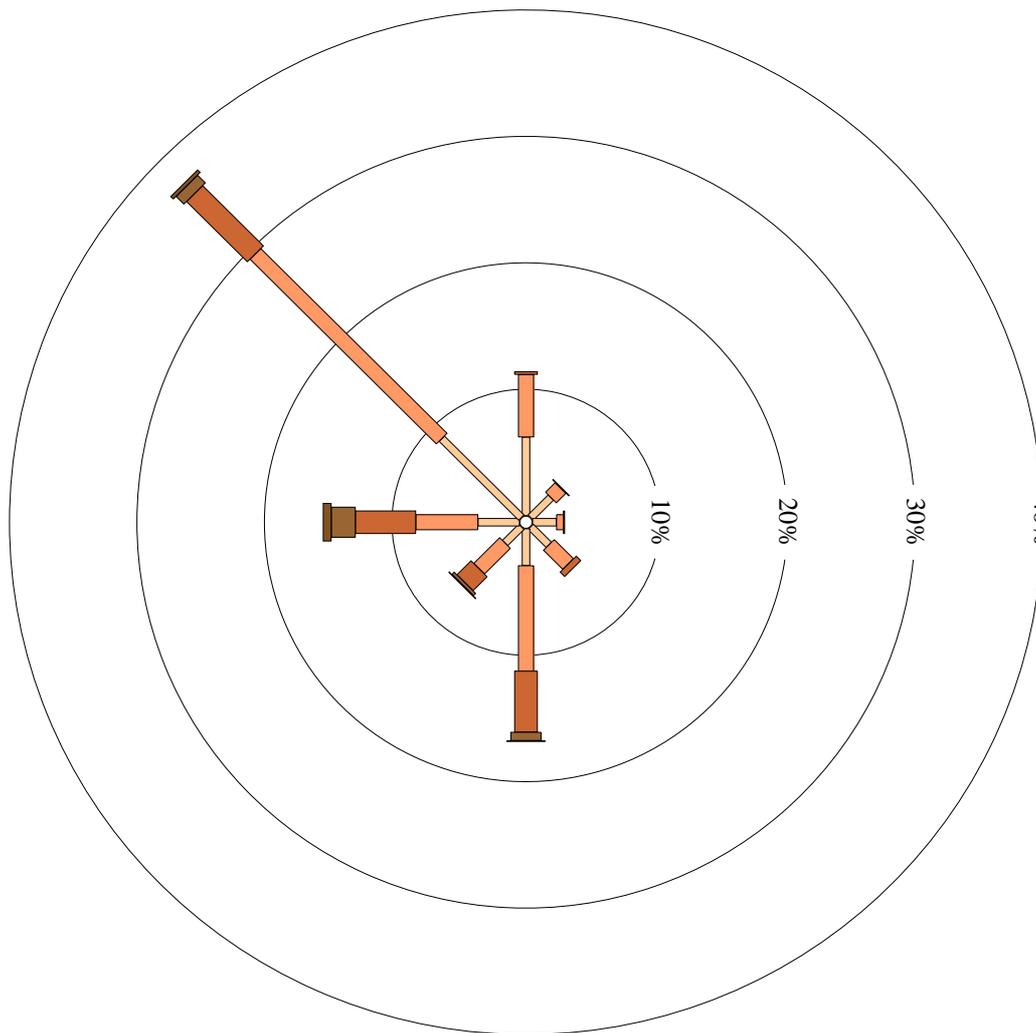
An asterisk (*) indicates that calm is less than 0.5%.

Other important info about this analysis is available in the accompanying notes.



9 am
7102 Total Observations

Calm 2%



Rose of Wind direction versus Wind speed in km/h (28 Nov 2000 to 11 Aug 2020)

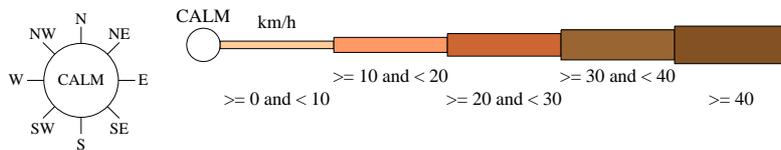
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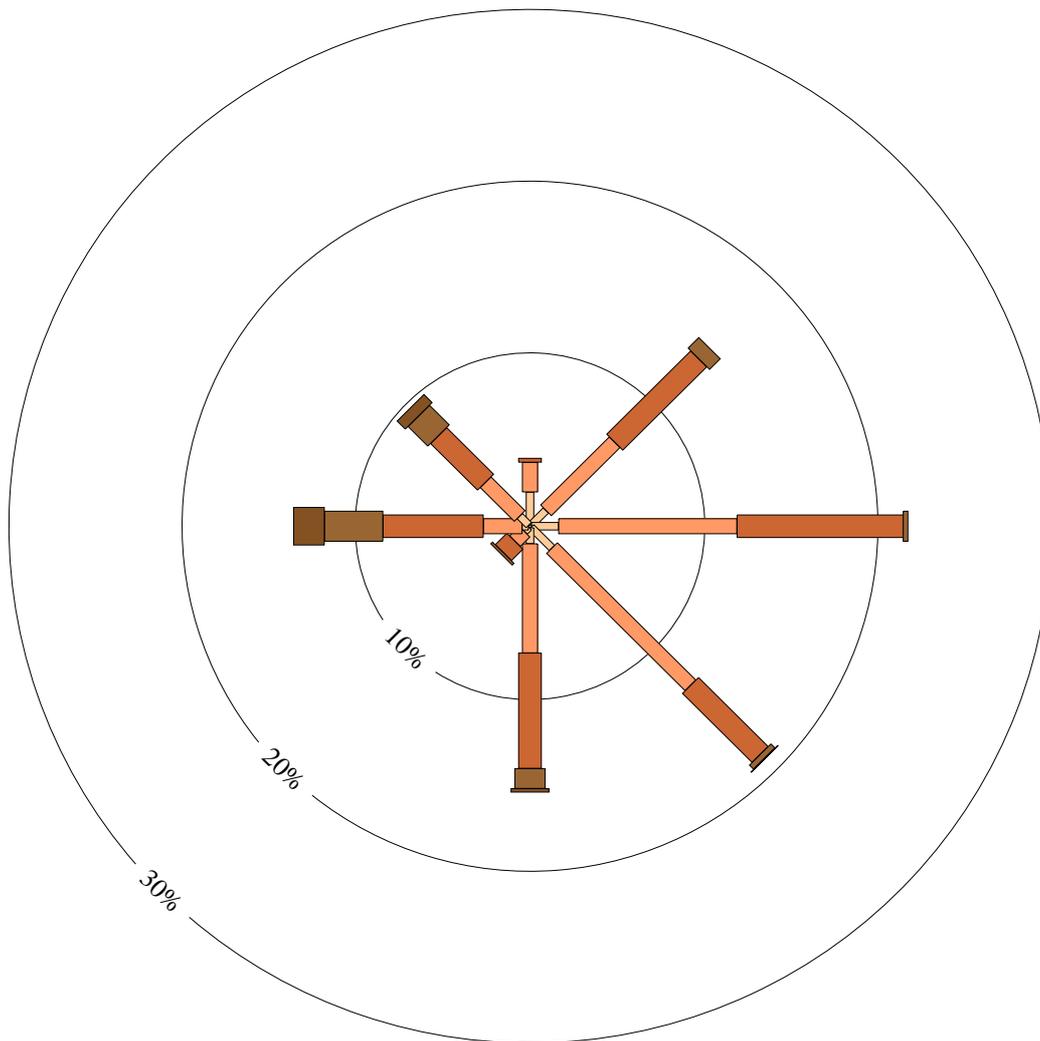
An asterisk (*) indicates that calm is less than 0.5%.

Other important info about this analysis is available in the accompanying notes.



3 pm
7106 Total Observations

Calm *



Air Quality Management Plan

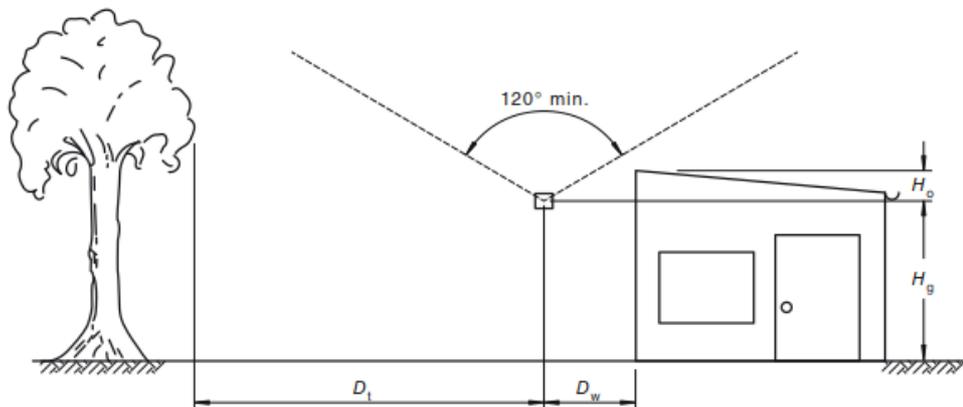
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Appendix B: Siting of Dust Monitoring Equipment

AS/NZS 3580.1.1:2016

12



LEGEND:

- H_g = Height of sampling inlet above ground—2 to 5 m for ground based sampling sites and up to 15 m for roof top sampling sites.
- H_o = Height of nearby obstacle above sampling inlet— $2H_o \leq D_w$
- D_t = Distance to nearby tree— ≥ 10 m
- D_w = Distance to wall (supporting structure)—minimum 1 m
- 120° = Minimum clear sky angle above sampling inlet

FIGURE 1 GENERALIZED GROUND LEVEL SAMPLING SITE

Dust Monitoring Equipment Siting (Source: Figure 1, AS3580.1.1:2016)

