REPORT

Ambient Air Quality Monitoring (AAQM) Report – March 2025

West Gate Tunnel Project

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Executive Summary

Air quality monitoring for the West Gate Tunnel Project has been specifically established to develop a ‘baseline’ of data from current local conditions. This baseline will be used to measure any changes once the tunnel opens. When the project opens, air quality monitoring will continue for up to five years.

The results of the West Gate Tunnel Project Ambient Air Quality Monitoring (AAQM) program for the period of 1 March 2025 to 31 March 2025 are presented below.

The following tables present the maximum measured concentration for each parameter at Stations 1, 2, 3, 4, 5, and 6 during the reporting period. The maximum concentration for each parameter is compared with the respective criteria.

The March 2025 ambient air quality monitoring programme results met the respective air quality objectives for all parameters measured at all ambient air quality stations.

Data capture statistics for March 2025 were 90 percent and above for all parameters.

A construction area (Millers Road exit ramp and noise wall relocation) is now adjacent Station 4, as a result, the measured pollutant concentrations may not be representative of traffic emissions.

Station 1 Summary – March 2025

Parameter	Units	Averaging period	Maximum concentration	SEPP Air quality objective[A]	Exceedances[C]	ERS Air quality objective[B] (APAC)	Exceedances[C]
$PM_{2.5}$	µg/m^3	24 hour	13	25	Nil	25	Nil
PM_{10}	µg/m^3	24 hour	34	50	Nil	50	Nil

Notes: A – SEPP(AAQ) objective
B - ERS Air Quality Objective (APAC)
C - Exceedances refers to the number of individual days the criterion was exceeded at any station.

Station 2, Station 3, Station 5, and Station 6 Summary – March 2025

Parameter	Units	Averaging period	Maximum concentration				SEPP Air quality objective[A]	Exceedances[C]	ERS Air quality objective[B] (APAC)	Exceedances[C]
			Station 2	Station 3	Station 5	Station 6				
$PM_{2.5}$	µg/m^3	24 hour	17	14	13	14	36	Nil	25	Nil
PM_{10}	µg/m^3	24 hour	45	31	33	47	60	Nil	50	Nil

Notes: A - SEPP(AQM) Intervention level
B - ERS Air Quality Objective (APAC)
C - Exceedances refers to the number of individual days the criterion was exceeded at any station.

Station 4 Summary – March 2025

Parameter	Units	Averaging period	Maximum concentration	SEPP Air quality objective	Exceedances[D]	ERS Air quality objective[C] (APAC)	Exceedances[D]
$PM_{2.5}$	µg/m^3	24 hour	13	36[A]	Nil	25[C]	Nil
PM_{10}	µg/m^3	24 hour	34	60[A]	Nil	50[C]	Nil
NO_2	ppb	1 hour	69	140[A]	Nil	80[C]	Nil
CO	ppm	1 hour	1.2	29[A]	Nil	-	-
CO	ppm	8 hour	0.5	-	-	9[C]	Nil
Benzene	ppb	24 hour	<0.5	3.0[B]	Nil	9[C]	Nil
Ethylbenzene	ppb	24 hour	<0.5	-	-	5000[C]	Nil
Toluene	ppb	24 hour	1.0	1000[B]	Nil	-	-
Total xylene isomers	ppb	24 hour	<1	250[B]	Nil	2000[C]	Nil

Notes: A – SEPP(AQM) Intervention level
B – Air NEPM Monitoring investigation level
C – ERS Air Quality Objective (APAC)
D – Exceedances refers to the number of individual days the criterion was exceeded at any station

Table of Contents

TABLES

FIGURES

APPENDICES

1.0 INTRODUCTION

Air quality monitoring for the West Gate Tunnel Project has been specifically established to develop a 'baseline' of data from current local conditions. This baseline will be used to measure any changes once the tunnel opens. When the project opens, air quality monitoring will continue for up to five years.

The results of the West Gate Tunnel Project Ambient Air Quality Monitoring (AAQM) program for the period of 1 March 2025 to 31 March 2025, are contained in the following report.

The AAQM program was conducted in accordance with the Environmental Performance Requirement (EPR) AQP4 for the Project and consists of six AAQM stations (AAQMS) monitoring the following ambient air quality indicators:

- continuous measurement of particulate matter with an equivalent aerodynamic diameter less than 10 microns (PM10)
- continuous measurement of particulate matter with an equivalent aerodynamic diameter less than 2.5 microns (PM2.5)
- continuous measurement of wind speed and wind direction.

Additionally, one of the specified AAQMS (Primula Avenue) monitors the following additional air quality indicators in combination with PM_{10} and $PM_{2.5}$:

- continuous monitoring of oxides of nitrogen ([NOx] comprising of nitrogen dioxide (NO2) and nitric oxide [NO])
- continuous monitoring of carbon monoxide (CO)
- one in six day monitoring of benzene, toluene, ethylbenzene, and xylene isomers (BTEX)
- continuous measurement of atmospheric pressure.

AAQMS Station 1 to Station 6 were installed and commissioned during the period 22/08/2018 to 12/10/2018. Specific installation dates can be found below in Section 2.1.

Details of the air quality indicators monitored at each AAQMS are provided in Table 1.

Table 1: AAQMS monitoring details

Site name	Location	Coordinates	Monitoring parameters
Station 1	Barbara Beyer Reserve, 2 Harris Street, Yarraville	-37.812730°S 144.900017°E	PM_{10} and $PM_{2.5}$ Ambient temperature, relative humidity, wind speed, and wind direction
Station 2	51-53 Francis Street	-37.821800°S 144.894383°E	PM_{10} and $PM_{2.5}$ Ambient temperature, relative humidity, wind speed, and wind direction
Station 3	Railway Lot 64, (part) 15 Goulburn Street, Yarraville	-37.814063°S 144.891320°E	PM_{10} and $PM_{2.5}$ Ambient temperature, relative humidity, wind speed, and wind direction
Station 4	44 Primula Avenue, Brooklyn	-37.824284°S 144.846425°E	PM_{10} and $PM_{2.5}$ NO, NO_2, NOx and CO BTEX – one in six day sampling (24 hour average) Ambient temperature, relative humidity, atmospheric pressure, wind speed, and wind direction
Station 5	Donald McLean Reserve, Spotswood	-37.826442°S 144.882133°E	PM_{10} and $PM_{2.5}$ Ambient temperature, relative humidity, atmospheric pressure, wind speed, and wind direction
Station 6	44 Millers Road Brooklyn	-37.821252°S 144.848878°E	PM_{10} and $PM_{2.5}$ Ambient temperature and relative humidity

2.0 AAQMS DETAILS

2.1 Site locations

AAQMS Station 1 to Station 5 were installed and commissioned during the period 22/08/2018 to 31/08/2018. AAQMS Station 6 (Millers Road) was commissioned on 12/10/2018. Meteorological sensors (wind speed and direction) were installed later due to delays in calibration from the instrument supplier. AAQMS commissioning dates are provided in Table 2. Figure 1 presents the locations of the AAQMS.

Table 2: AAQMS commissioning dates

Parameter	Station 1	Station 2	Station 3	Station 4	Station 5	Station 6
AAQMS	23/08/2018	22/08/2018	22/08/2018	22/08/2018	31/08/2018	12/10/2018
Wind speed & direction	07/09/2018	20/09/2018	14/09/2018	10/09/2018	17/09/2018	23/11/2018[A]

Notes: A) wind sensor is not compliant with siting criteria specified in AS 3580.14

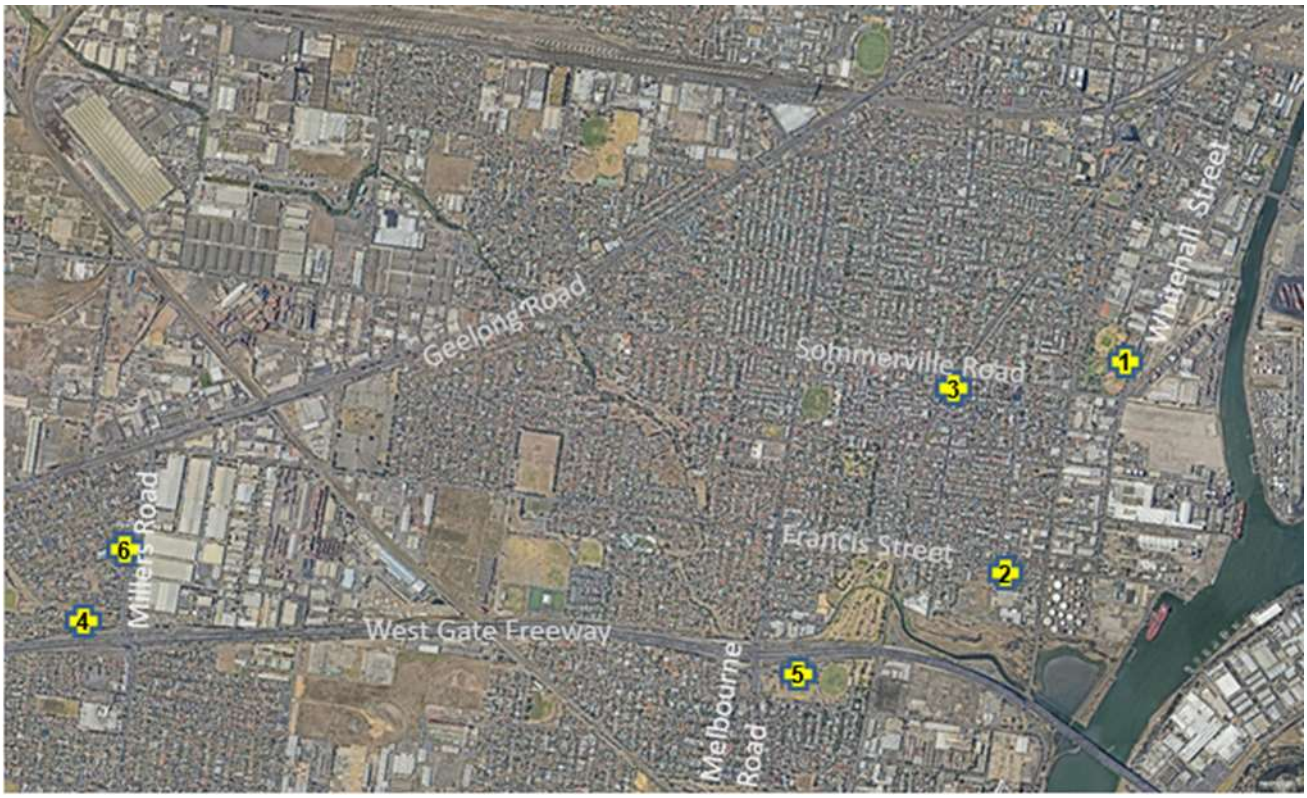

Figure 1: West Gate Tunnel AAQMS site locations

2.2 Siting assessment

Australian Standard AS/NZS 3580.1.1 *"Methods for Sampling and Analysis of Ambient Air – Part 1.1. Guide to Siting Air Monitoring Equipment"* provides general guidance for the siting of ambient air monitoring equipment and specific siting parameters for individual air pollutants. Table 3 provides a comparison between recommended criteria contained in the Standard for the parameters monitored at neighbourhood and peak monitoring stations with actual conditions at each AAQMS.

Table 3: Australian standard AAQMS siting criteria compliance

Station	Station 1	Station 2	Station 3	Station 4	Station 5	Station 6
Station type	Neighbourhood	Peak	Peak	Peak	Peak	Peak
Inlet height above ground level 1.0 m – 15 m	✓	✓	✓	✓	✓	✓
Clear sky angle 120° (Neighbourhood)	✓	-	-	-	-	-
Unrestricted 270° airflow around inlet (Neighbourhood)	✓	-	-	-	-	-
Unrestricted 180° airflow around inlet (Peak)	-	✓	✓	✓	✓	✓
Distance to supporting structure ≥ 1 m	✓	✓	✓	✓	✓	✓
10 m from drip line of trees	✓	✓	✓	✓	✓	✗[A]
No extraneous sources nearby	✓	✓	✓	✗[B]	✓	✗[C]
Greater than 50 m from road (≤ 10,000 vehicles/day)	✓	-	-	-	-	-
Greater than 2 m from road (Peak station)	-	✓	✓	✓	✓	✓

Notes: A) Tree drip line is <3 m from sampler inlets and meteorological monitoring equipment
B) Temporary construction area for Millers Road noise wall and exit ramp relocation works
C) Residential chimney is <5 m from the sampler inlet.

2.3 Equipment specifications

Table 4 provides a list of the monitoring equipment installed at the AAQMS.

Table 4: AAQMS instrumentation

Parameter	Equipment item	Manufacturer	Model
$PM_{2.5}$	Beta Attenuation Monitor (BAM)	Thermo Fisher Scientific Inc.	5014i
PM_{10}	Beta Attenuation Monitor (BAM)	Thermo Fisher Scientific Inc.	5014i
Oxides of Nitrogen	Chemiluminescence	Thermo Fisher Scientific Inc.	42i
Carbon Monoxide	Infra-red gas filter correlation	Thermo Fisher Scientific Inc.	48i
Temperature	Pt100 resistive platinum sensor	Thermo Fisher Scientific Inc.	5014i
BTEX	Summa canister	Restek	6 litre
Relative humidity	Capacitive thin film sensor	Thermo Fisher Scientific Inc.	5014i
Atmospheric Pressure	Beta Attenuation Monitor (BAM)	Thermo Fisher Scientific Inc.	5014i
Wind speed and wind direction	Ultrasonic anemometer	RM Young	Model 86000

3.0 AIR QUALITY CRITERIA

The ambient air quality criteria applicable to the West Gate Tunnel Project were derived from the State Environment Protection Policies (SEPPs); Ambient Air Quality (SEPP(AAQ)), Air Quality Management (SEPP(AQM)) and the National Environment Protection (Air Toxics) Measure Monitoring Investigation Levels (MILs).

As part of the implementation of the Environment Protection Act 2017 (Act) which came into effect on 1 July 2021, the SEPP(AAQ) and SEPP(AQM) have been discontinued and some of their content has been replaced by the “Environment Reference Standard” (ERS), publication S245. In addition, some elements of the SEPPs will ultimately be replaced by proposed guidelines.

EPA publication 1998 – June 2021 “Compliance Code for Victoria’s Big Build Projects” states for the West Gate Tunnel Project, the obligations under Section 25(1) of the Act for General Environmental Duty (GED) are met during design and construction by complying with the West Gate Tunnel Project Environmental Performance Requirements (EPRs), which include undertaking ambient air quality monitoring in accordance with SEPP(AAQ) and SEPP(AQM). This report therefore continues to make reference to the SEPP(AAQ) and SEPP(AQM).

3.1 SEPP (AAQ)

The SEPP(AAQ) sets out the environmental indicators and objectives for ambient air quality that seek to achieve or maintain environmental values in Victoria. The SEPP(AAQ) adopts the requirements of the *National Environment Protection (Ambient Air Quality) Measure* (Air NEPM) and its environmental quality objectives (EQOs) for CO, NO_2, and particles (as PM_{10} and $PM_{2.5}$). The SEPP(AAQ) EQOs apply to air quality within a region or sub-region considered to be representative of exposure of the general population in Victoria. These objectives have been adopted for the purposes of comparison with results from background/ neighbourhood monitoring stations for the West Gate Tunnel Project and are relevant to Station 1 (Yarraville Gardens).

3.2 SEPP (AQM)

The SEPP(AQM) sets out legislative requirements for managing and assessing air emissions in Victoria. The aim of the SEPP(AQM) is to ensure that prescribed air quality objectives are met and protect the beneficial uses of the air environment. Schedule B lists intervention levels which are used in the assessment of local or neighbourhood air monitoring data. Consistent with assessment of impacts described in the Environment Effects Statement for the West Gate Tunnel Project, the SEPP(AQM) intervention levels will continue to be adopted for purposes of comparison with results from peak monitoring stations for the West Gate Tunnel Project. These AQO are applicable to Station 2 (Francis Street), Station 3 (Railway Reserve), Station 4 (Primula Avenue), Station 5 (Donald McLean Reserve), and Station 6 (Millers Road).

3.3 NEPM (Air Toxics)

The aim of the Air Toxics NEPM is to gain a greater understanding of the levels of air toxics at specific locations where elevated concentrations are likely to occur and where the potential for significant human exposure exists. The Air Toxics NEPM established monitoring investigation levels (MILs) relevant for the West Gate Tunnel Project for benzene, toluene and xylene isomers. The MILs are used purposes of comparison with results from the air toxics monitored at Station 4 (Primula Avenue). Table 5 presents the air quality indicators and objectives for each AAQMS for the West Gate Tunnel Project.

Table 5: Air quality indicators and objectives

Location	Pollutant	Units	Air Quality Objective	Averaging period
Station 1	PM_{10}	$\mu g/m^3$	50	24 hour
			20	Annual
	$PM_{2.5}$		25	24 hour
			8	Annual
Station 2 Station 3 Station 4 Station 5 Station 6	PM_{10}	$\mu g/m^3$	60	24 hour
	$PM_{2.5}$		36	
Station 4	CO	ppm	29	1 hour
	NO_2	ppb	140	1 hour
	Benzene	ppb	3	Annual
	Toluene	ppb	1000	24 hour
			100	Annual
	Ethylbenzene	ppb	-	24 hour
	Xylene isomers	ppb	250	24 hour
			200	Annual

3.4 Environmental Reference Standard (ERS)

The environmental reference standard (ERS) is formed under the Environmental Protection Act (2017) to support the protection of human health and the environment from pollution and waste in Victoria by identifying environmental values to be achieved or maintained. The ERS sets indicators and objectives to be measured to determine or assess whether the environmental values are being achieved. The Air Pollution Assessment Criteria (APAC) set out in the ERS and subordinate publication EPA Publication 1961, "Guideline for Assessing and Minimising Air Pollution in Victoria", relevant for the West Gate Tunnel Project are presented in Table 6.

Table 6: ERS Ambient air quality indicators and objectives

Location	Pollutant	Units	Air Quality Objective (APAC)[1]	Averaging period
Stations 1 - 6	PM_{10}	µg/m^3	50	24 hour
			20	Annual
	$PM_{2.5}$	µg/m^3	25	24 hour
			8	Annual
Station 4	CO	ppm	9.0	8 hour rolling
	NO_2	ppb	80	1 hour
	Benzene	ppb	9	24 hour
		ppb	3	Annual
	Ethylbenzene	ppb	5000	24 hour
		ppb	60	Annual
	Xylene isomers	ppb	2000	24 hour
		ppb	20	Annual

Note: 1 EPA Publication 1961 (Guideline for Assessing and Minimising Air Pollution in Victoria)

4.0 TEST METHODS

4.1 Particulate matter ($PM_{2.5}$)

$PM_{2.5}$ concentrations are determined using a Beta Attenuation Monitor (BAM).

Suspended particulate matter in ambient air is measured using the attenuation of beta rays as a surrogate for continuous mass determination. Beta rays are high energy electrons generated from the radioactive decay of the radon isotope Rn-222. When contacting particulate matter beta rays are either absorbed or their energy level is diminished. The relationship between the attenuation of beta rays between the source and detector is used to determine the mass density.

The BAM is equipped with a flow control and measurement system. The flow control system volumetrically controls the flowrate to 16.7 L/min. The flowrate is used with the mass density to calculate the particulate matter concentration.

The sampler is fitted with a size selective inlet, which separates particles with an equivalent aerodynamic diameter greater than 10 microns from the sample stream. An in-line $PM_{2.5}$ particle size separator is also fitted to further separate particles; only those with an equivalent aerodynamic diameter less than 2.5 microns can pass through the particle size separator to the filter for mass determination.

The $PM_{2.5}$ monitoring method is based on the requirements contained within Australian Standard AS/NZS 3580.9.12 "*Methods for Sampling and Analysis of Ambient Air – Method 9.12: Determination of Suspended Particulate Matter – $PM_{2.5}$ Beta Attenuation Monitors*" (NATA Laboratory Accreditation No. 1910).

4.2 Particulate matter (PM_{10})

PM_{10} concentrations are determined using a continuous BAM without an in-line $PM_{2.5}$ particle size separator. All other measurement processes remain the same as for the $PM_{2.5}$ test method.

The PM_{10} monitoring method is based on the requirements contained within Australian Standard AS/NZS 3580.9.11:2016 "*Methods for Sampling and Analysis of Ambient Air – Method 9.11: Determination of Suspended Particulate Matter – PM_{10} Beta Attenuation Monitors"* (NATA Laboratory Accreditation No. 1910).

4.3 Nitrogen dioxide (NO_2)

Oxides of nitrogen concentrations were determined using a 42i Thermo Scientific chemiluminescence gas analyser.

Automatic calibrations are carried out daily against a NATA certified reference gas mixture. Manual calibrations are conducted at one month intervals.

The oxides of nitrogen (NO, NO_2, and NO_x) monitoring method is based on the requirements of Australian Standard AS 3580.5.1, *"Determination of Oxides of Nitrogen – Chemiluminescence Method"*.

4.4 Carbon monoxide (CO)

Carbon monoxide concentrations are determined using a 48i Thermo Scientific infra-red gas filter correlation analyser.

Automatic calibrations are carried out daily against a NATA-certified reference gas mixture. Manual calibrations are conducted at one month intervals.

The carbon monoxide monitoring method is based on the requirements of Australian Standard AS 3580.7.1, "*Determination of Carbon Monoxide – Direct Reading Instrumental Method"*.

4.5 Volatile organic compounds (BTEX)

A sample is collected in an evacuated electro-polished and passivated stainless steel canister. Analysis involves separation by gas chromatography (GC) and measurement by mass selective (MS) detector.

The procedure for sampling Volatile Organic Compounds (VOCs) using evacuated canisters, and for the subsequent analysis, is described in USEPA Method TO-15 "Determination of Volatile Organic Compounds (VOCs) in air collected in specially-prepared canisters and analysed by Gas Chromatography/Mass Spectrometry (GC/MS)".

Samples were analysed by Queensland Health (NATA Laboratory Accreditation No. 41) based on USEPA method TO-15. The test method used was in accordance with Golder Source Test Method C9, "Canister (Evacuated) Sampling for VOC: In Ambient Air and Source Emissions".

4.6 Meteorological parameters

Monitoring of meteorological parameters; wind speed/direction, temperature, relative humidity, solar radiation and rainfall was conducted in accordance with Australian Standard AS 3580.14 "*Methods for Sampling and Analysis of Ambient Air – Part 14: Meteorological Monitoring for Ambient Air Quality Monitoring Applications"* (NATA Laboratory Accreditation No. 1910).

5.0 MEASUREMENT UNCERTAINTY

5.1 $PM_{2.5}$

The measurement uncertainty for $PM_{2.5}$ by BAM is published by Thermo-Fisher as ±2 µg/m^3 (24 hour average).

5.2 PM_{10}

The measurement uncertainty for $PM_{2.5}$ by BAM is published by Thermo-Fisher as ±2 µg/m^3 (24 hour average).

5.3 NO_2

The measurement uncertainty for NO, NO2 and NOx by Chemiluminescence is published in AS3580.5.1 as ±10% (24 hour average).

5.4 CO

The measurement uncertainty for CO by Infra-red gas filter correlation is published in AS3580.7.1 as ±10% (24 hour average).

5.5 Benzene

USEPA Method TO-15 cites the accuracy and precision for two ambient air quality studies conducted in the United States of America. The average replicate precision for a range of 16 compounds in both studies was 15%. Replicate precision was defined as the ratio of the average difference between replicates to the average value of replicates.

The reported accuracies for both studies ranged between ± 4 % and ± 31%. The average accuracy for both studies for the range of 16 compounds was ± 11%. Accuracy is defined as the ratio of the difference between expected and observed audit results to the expected audit result.

5.6 Meteorological parameters

The estimated measurement uncertainty for each of the parameters is presented in Table 7.

Table 7: Meteorological parameters measurement uncertainty

Parameter	Measurement uncertainty [A]
Wind speed	Greater of ±0.6 m/s or 5%
Wind direction	±5°
Barometric pressure	±3 hPa
Temperature	±0.6°C
Relative humidity	±5 – 7%RH

Notes: A) Measurement uncertainty estimates are as published in AS3580.14 "*Methods for Sampling and Analysis of Ambient Air – Part 14 Meteorological Monitoring for Ambient Air Quality Monitoring Applications*".

5.7 Calibration and maintenance

Sample flow rate calibration was conducted on a monthly basis using a NATA calibrated primary standard flowmeter. Calibration details for the reporting period are presented in Table 8.

Table 8: Calibrations

Location	Parameter	Last Calibration Date	Calibration Type
Station 1	PM_{10}	31/03/2025	6 monthly
	$PM_{2.5}$	31/03/2025	6 monthly
	Wind speed and direction	21/08/2024	Two yearly
Station 2	PM_{10}	31/03/2025	6 monthly
	$PM_{2.5}$	31/03/2025	6 monthly
	Wind speed and direction	7/08/2024	Two yearly
Station 3	PM_{10}	17/03/2025	6 monthly
	$PM_{2.5}$	17/03/2025	6 monthly
	Wind speed and direction	29/10/2024	Two yearly
Station 4	PM_{10}	13/03/2025	6 monthly
	$PM_{2.5}$	13/03/2025	6 monthly
	$NO/NO_2/NOx$	13/03/2025	6 monthly
	CO	13/03/2025	6 monthly
	BTEX	NA	Flow-controllers and canisters certified by lab
	Wind speed and direction	2/09/2024	Two yearly

Location	Parameter	Last Calibration Date	Calibration Type
Station 5	PM_{10}	17/03/2025	6 monthly
	$PM_{2.5}$	17/03/2025	6 monthly
	Wind speed and direction	30/09/2024	Two yearly
Station 6	PM_{10}	17/03/2025	6 monthly
	$PM_{2.5}$	17/03/2025	6 monthly

6.0 RESULTS

The monitoring results for 1 March 2025 to 31 March 2025 are presented in the following sections.

6.1 Particulate matter (BAM $PM_{2.5}$ & PM_{10})

$PM_{2.5}$ and PM_{10} were continuously monitored and 5-minute averages logged. The 5-minute average data was transformed to 24 hour averages for reporting.

$PM_{2.5}$ and PM_{10} concentration statistics from the reporting period for Station 1 to Station 6 are presented in Table 9 to Table 14. The 24 hour average plots for Station 1 to Station 6 are presented in Figure 2 to Figure 7.

6.1.1 Station 1 – Yarraville Gardens

Table 9: Station 1 (Yarraville Gardens AAQMS) $PM_{2.5}$ and PM_{10} percentiles (24 hour average)

Parameter	Concentration (µg/m³)[A]							SEPP Air quality objective[B]	ERS Air quality objective[C]
	Maximum	99th	(µg/m³)	95th	90th	75th	50th	(µg/m³)	(µg/m³)
$PM_{2.5}$	13	13	25	13	12	9.6	6.7	25	25
PM_{10}	34	34	50	30	22	19	15	50	50

Notes: A) Micrograms per cubic metre at 0°C and 101.3 kPa
B) SEPP(AAQ) Objective
C) ERS AAQ Objective
Values rounded to two significant figures.

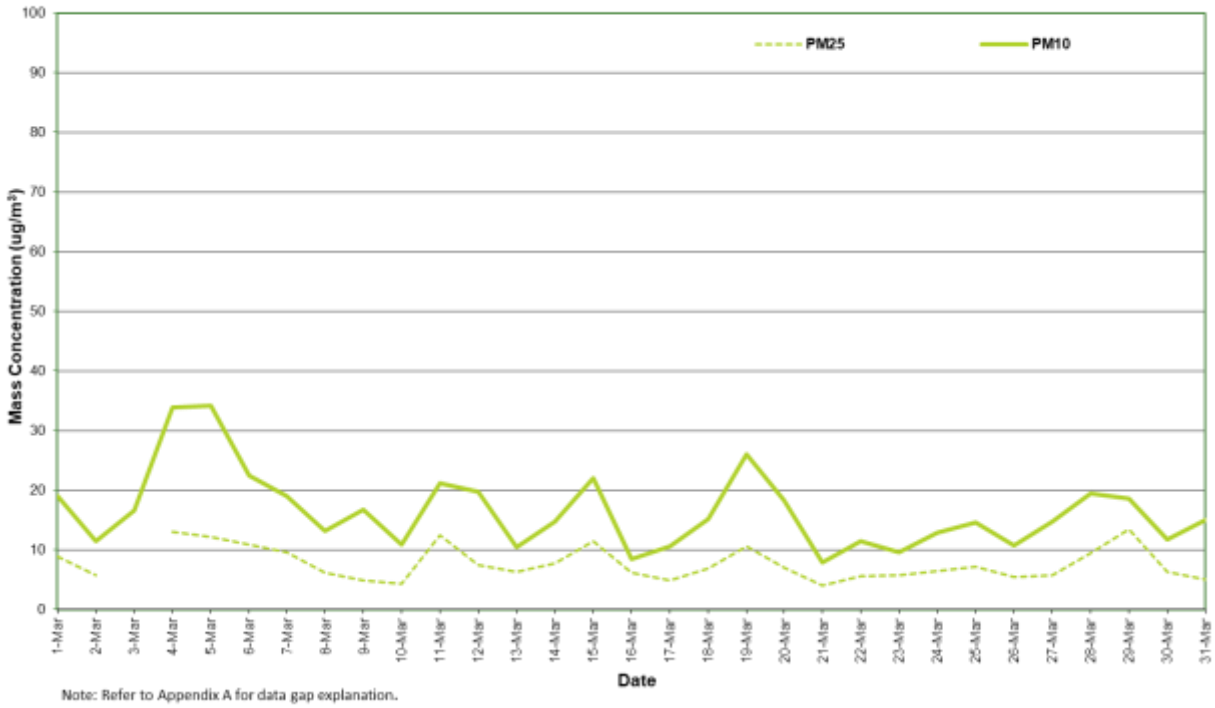

Figure 2: Station 1 $PM_{2.5}$ and PM_{10} concentration (24 hour average) – March 2025

6.1.2 Station 2 – Francis Street

Table 10: Station 2 (Francis Street AAQMS) $PM_{2.5}$ and PM_{10} percentiles (24 hour average)

Parameter	Concentration (µg/m³)[A]							SEPP Air quality objective[B]	ERS Air quality objective[C]
	Maximum	99th	98th	95th	90th	75th	50th	(µg/m³)	(µg/m³)
$PM_{2.5}$	17	16	16	14	12	10	7.1	36	25
PM_{10}	45	42	39	34	31	28	20	60	50

Notes: A) Micrograms per cubic metre at 0°C and 101.3 kPa
B) SEPP(AAQ) Objective
C) ERS AAQ Objective
Values rounded to two significant figures.

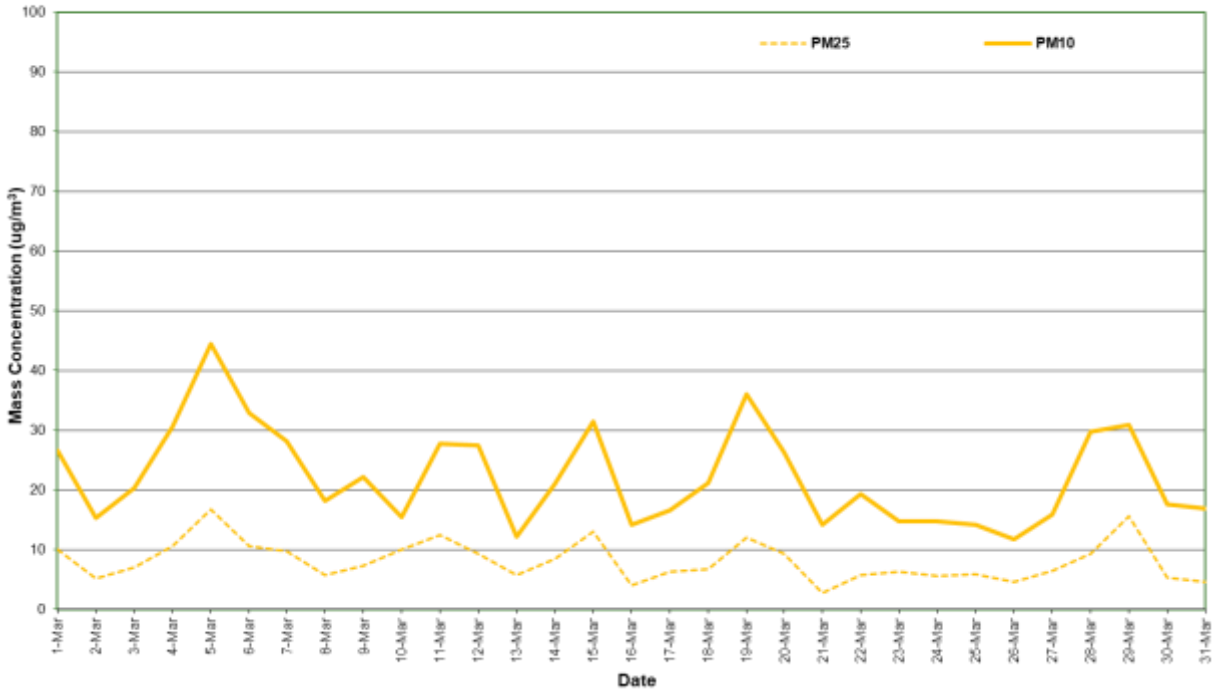

Figure 3: Station 2 $PM_{2.5}$ and PM_{10} concentration (24 Hour Average) – March 2025

6.1.3 Station 3 – Railway Reserve

Table 11: Station 3 (Railway Reserve AAQMS) $PM_{2.5}$ and PM_{10} percentiles (24 hour average)

Parameter	Concentration (µg/m³)[A]							SEPP Air quality objective[B]	ERS Air quality objective[C]
	Maximum	99th	98th	95th	90th	75th	50th	(µg/m³)	(µg/m³)
$PM_{2.5}$	14	14	13	13	11	9.5	6.4	36	25
PM_{10}	31	29	27	25	25	21	15	60	50

Notes: A) Micrograms per cubic metre at 0°C and 101.3 kPa
B) SEPP(AAQ) Objective
C) ERS AAQ Objective
Values rounded to two significant figures.

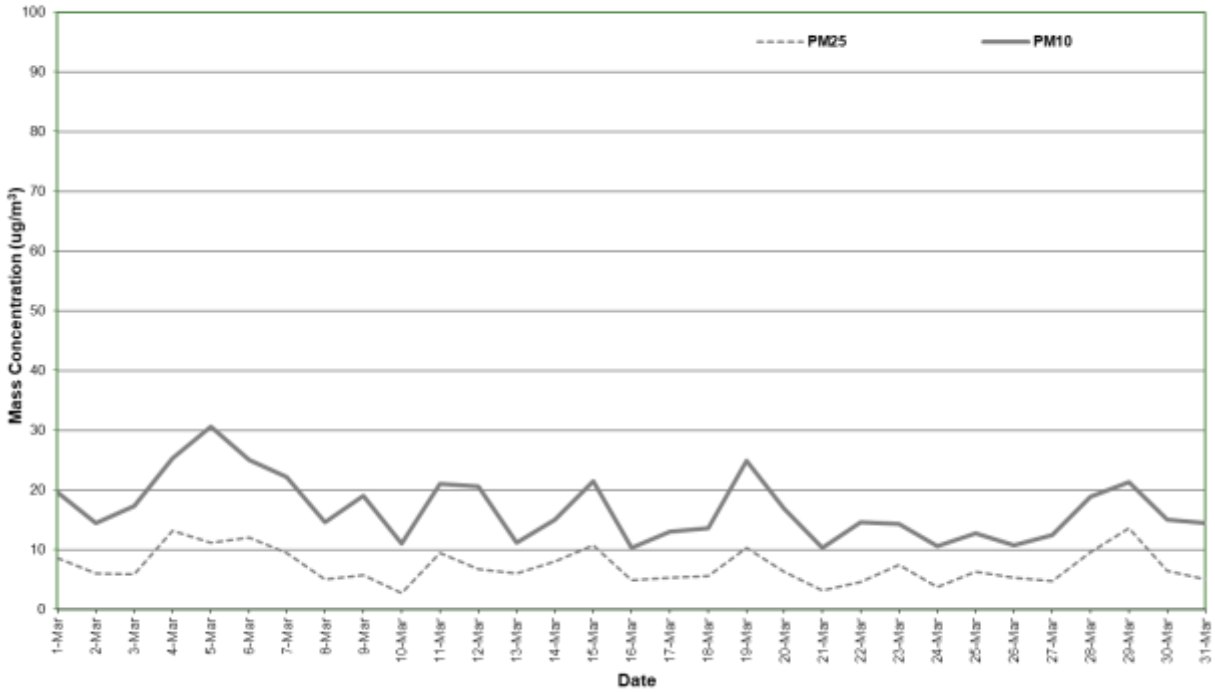

Figure 4: Station 3 $PM_{2.5}$ and PM_{10} concentration (24 hour average) – March 2025

6.1.4 Station 4 – Primula Avenue

Table 12: Station 4 (Primula Avenue AAQMS) $PM_{2.5}$ and PM_{10} percentiles (24 hour average)

Parameter	Concentration (µg/m³)[A]							SEPP Air quality objective[B]	ERS Air quality objective[C]
	Maximum	99th	98th	95th	90th	75th	50th	(µg/m³)	(µg/m³)
$PM_{2.5}$	13	13	12	12	11	10	6.1	36	25
PM_{10}	34	32	31	28	27	22	17	60	50

Notes: A) Micrograms per cubic metre at 0°C and 101.3 kPa
B) SEPP(AAQ) Objective
C) ERS AAQ Objective
Values rounded to two significant figures.

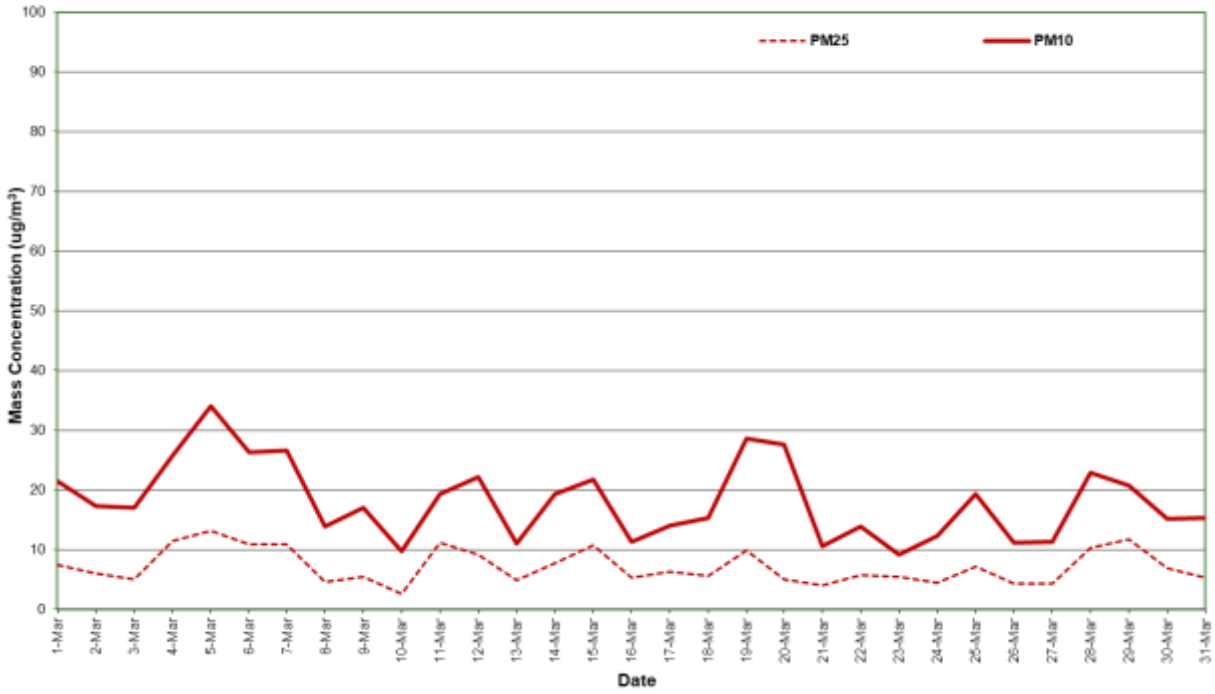

Figure 5: Station 4 $PM_{2.5}$ and PM_{10} concentration (24 hour average) – March 2025

6.1.5 Station 5 – Donald McLean Reserve

Table 13: Station 5 (Donald McLean Reserve AAQMS) $PM_{2.5}$ and PM_{10} percentiles (24 hour average)

Parameter	Concentration (µg/m³)[A]							SEPP Air quality objective[B]	ERS Air quality objective[C]
	Maximum	99th	98th	95th	90th	75th	50th	(µg/m³)	(µg/m³)
$PM_{2.5}$	13	13	13	13	12	9.2	5.8	36	25
PM_{10}	33	31	29	27	25	21	14	60	50

Notes: A) Micrograms per cubic metre at 0°C and 101.3 kPa
B) SEPP(AAQ) Objective
C) ERS AAQ Objective
Values rounded to two significant figures.

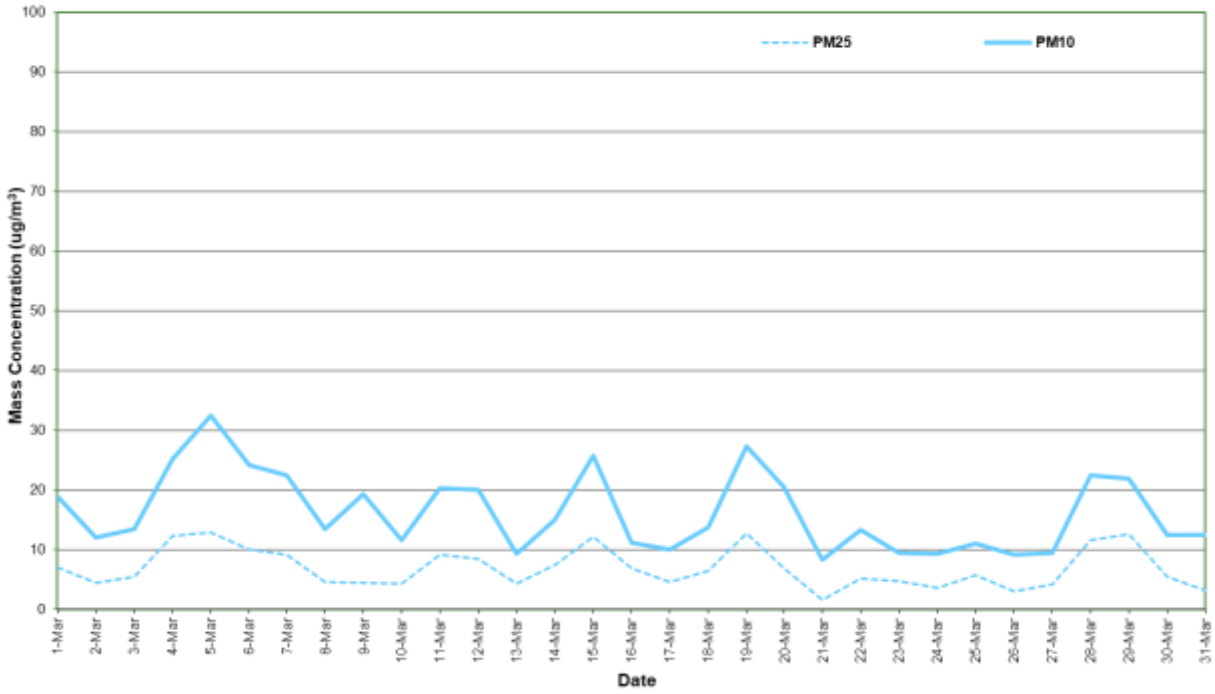

Figure 6: Station 5 $PM_{2.5}$ and PM_{10} concentration (24 hour average) – March 2025

6.1.6 Station 6 – Millers Road

Table 14: Station 6 (Millers Road AAQMS) $PM_{2.5}$ and PM_{10} percentiles (24 hour average)

Parameter	Concentration (µg/m³)[A]							SEPP Air quality objective[B]	ERS Air quality objective[C]
	Maximum	99th	98th	95th	90th	75th	50th	(µg/m³)	(µg/m³)
$PM_{2.5}$	14	13	13	12	11	8.8	6.2	36	25
PM_{10}	47	44	42	39	34	28	19	60	50

Notes: A) Micrograms per cubic metre at 0°C and 101.3 kPa
B) SEPP(AAQ) Objective
C) ERS AAQ Objective
Values rounded to two significant figures.

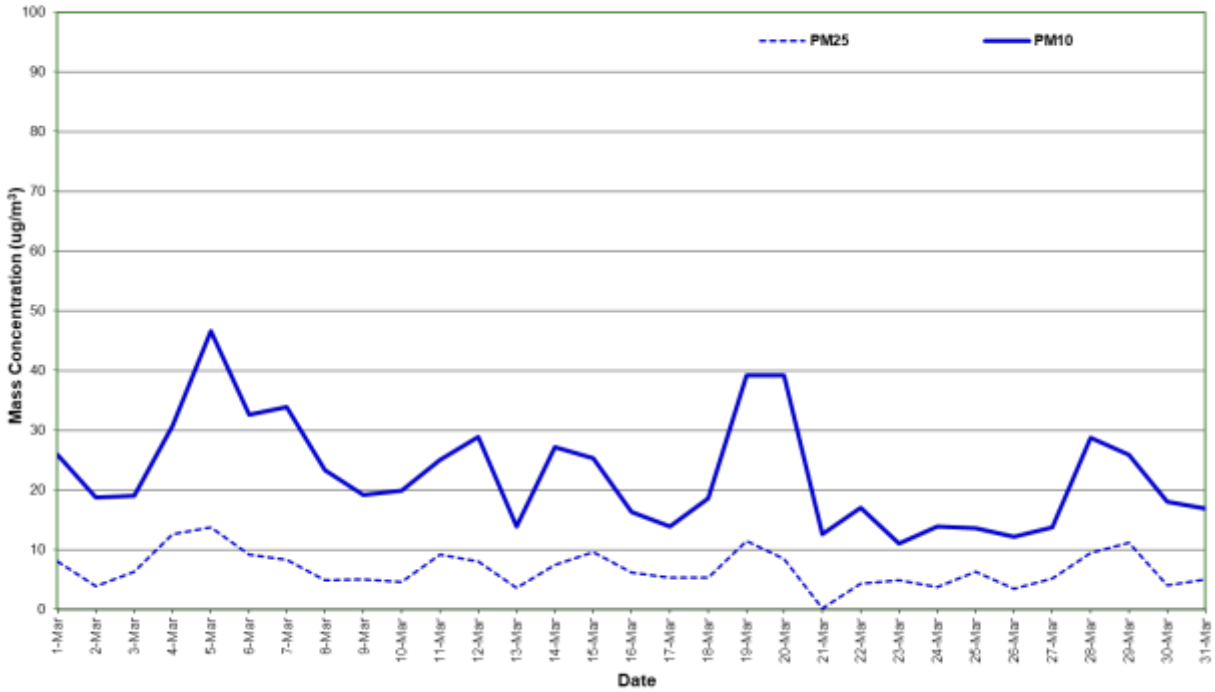

Figure 7: Station 6 $PM_{2.5}$ and PM_{10} concentration (24 hour average) – March 2025

6.1.7 Combined $PM_{2.5}$ mass concentrations

Combined plots of the AAQMS $PM_{2.5}$ and PM_{10} are presented in Figure 8 and Figure 9 respectively.

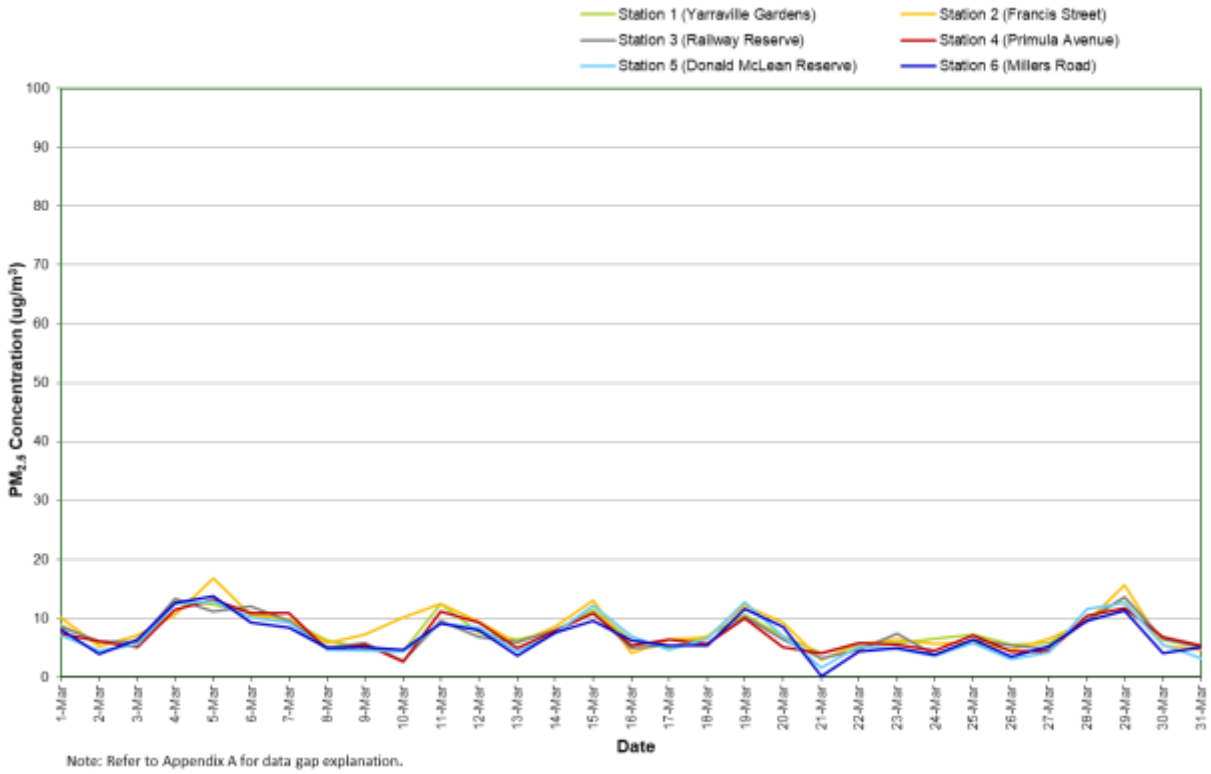

Figure 8: Combined $PM_{2.5}$ concentration (24 hour average) – March 2025

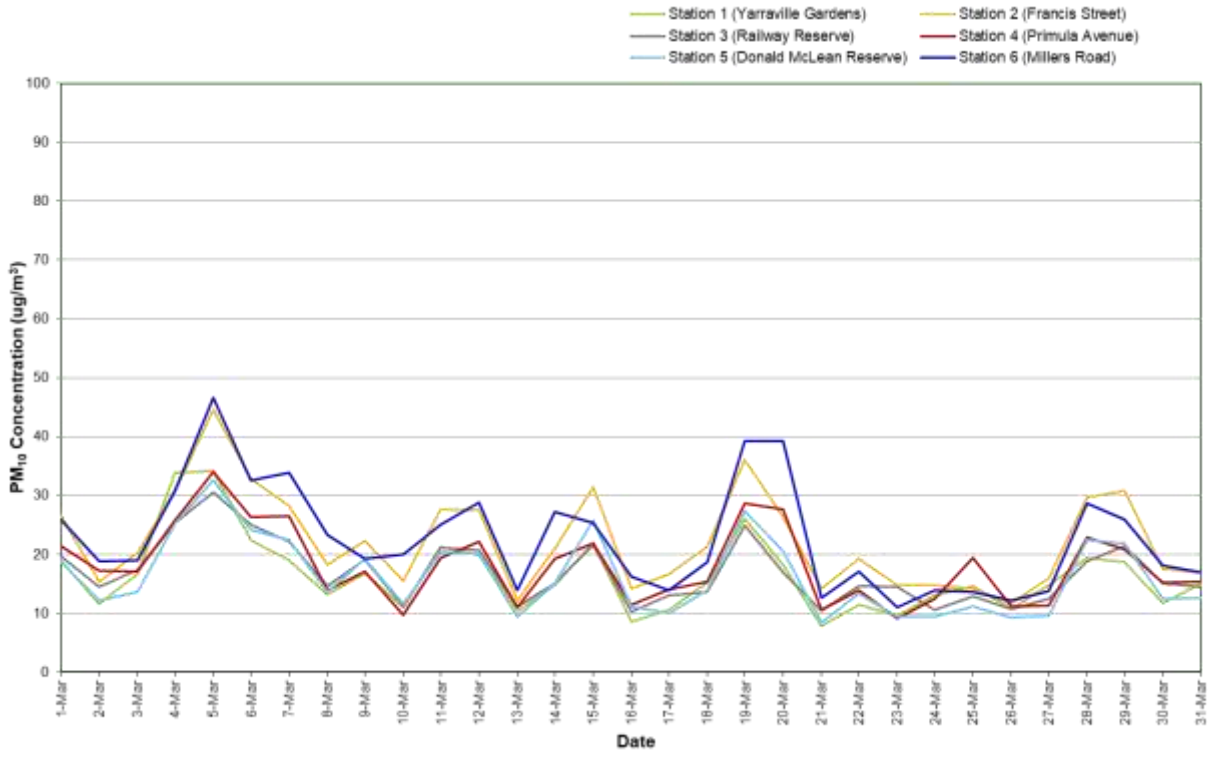

Figure 9: Combined PM_{10} concentration (24 hour average) – March 2025

6.2 Nitrogen dioxide (NO_2)

NO_2 (1 hour average) mass concentration statistics for the reporting period are given in Table 15. A plot of NO_2 (1 hour average) mass concentration for the reporting period is presented in Figure 10.

Table 15: Station 4 (Primula Avenue AAQMS) NO_2 percentiles (1 hour average)

Parameter	Concentration (ppb)[A]							SEPP Air quality objective[B]	ERS Air quality objective[C]
	Maximum	99th	(µg/m3)	95th	90th	75th	50th	(ppb)	(ppb)
NO_2	69	39	32	27	22	16	11	140	80

Notes: A) Parts per billion
B) SEPP(AAQ) Objective
C) ERS AAQ Objective
Values rounded to two significant figures.

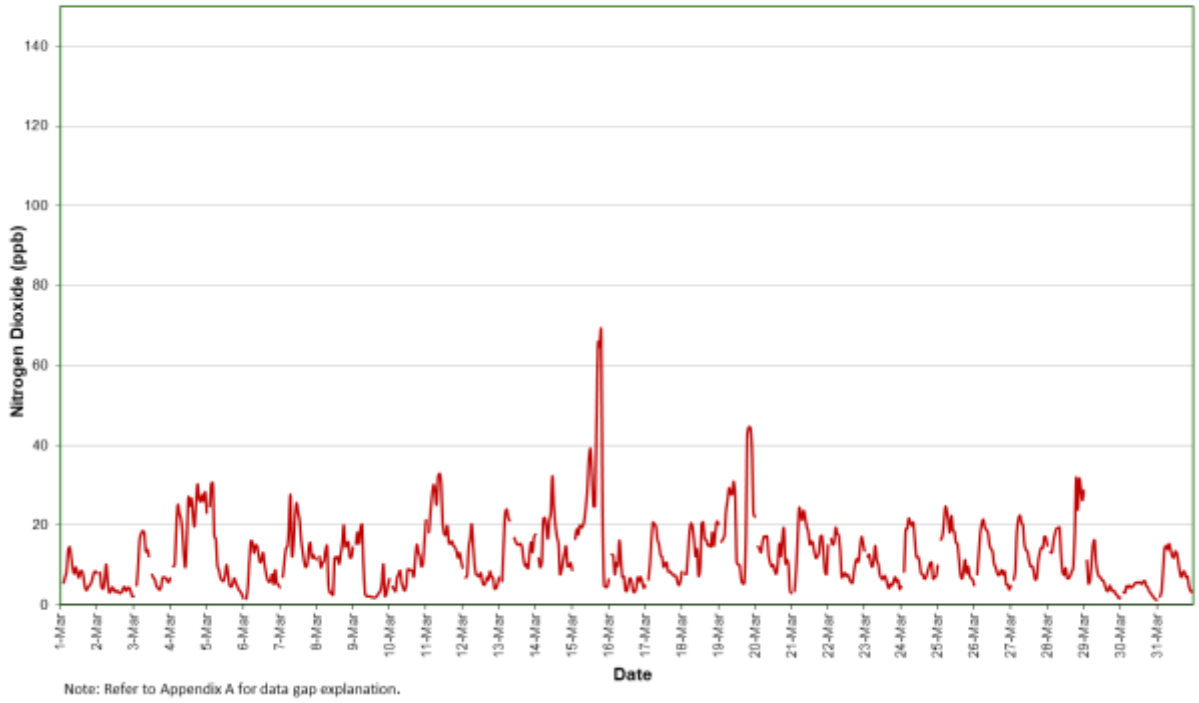

Figure 10: Station 4 NO_2 concentration (1 hour average) – March 2025

6.3 Carbon monoxide (CO)

Carbon monoxide (1-hour average and 8-hour rolling average) mass concentration statistics for the reporting period are given in Table 16. A plot of CO (1 hour average) and CO (8-hour rolling average) concentrations for the reporting period is presented in Figure 11 and Figure 12 respectively.

Table 16: Station 4 (Primula Avenue AAQMS) CO percentiles (1 hour and 8-hour average)

Averaging period	CO Concentration (ppm)[A]							SEPP Air quality objective[B]	ERS Air quality objective[C]
	Maximum	99th	98th	95th	90th	75th	50th	(ppm)	(ppm)
1-hour	1.2	0.59	0.53	0.45	0.40	0.33	0.29	29	-
8-hour (rolling)	0.5	0.48	0.47	0.43	0.40	0.33	0.29	-	9

Notes: A) Parts per million
B) SEPP(AAQ) Objective
C) ERS AAQ Objective
Values rounded to two significant figures.

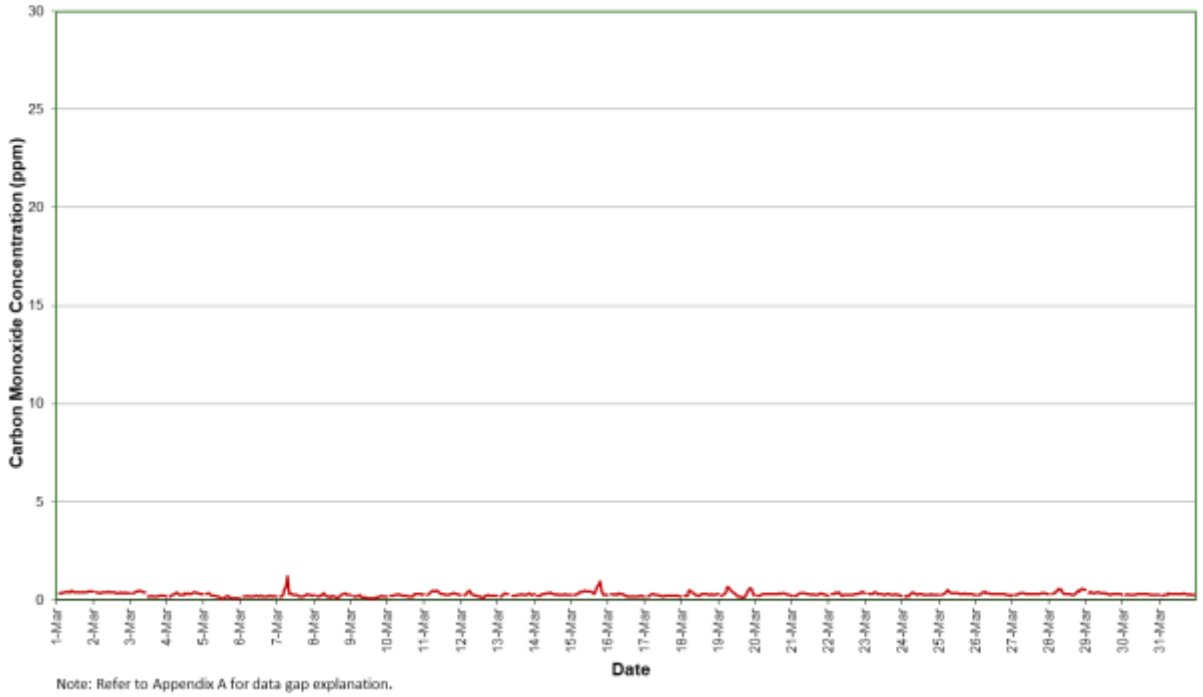

Figure 11: Station 4 CO concentration (1 hour average) – March 2025

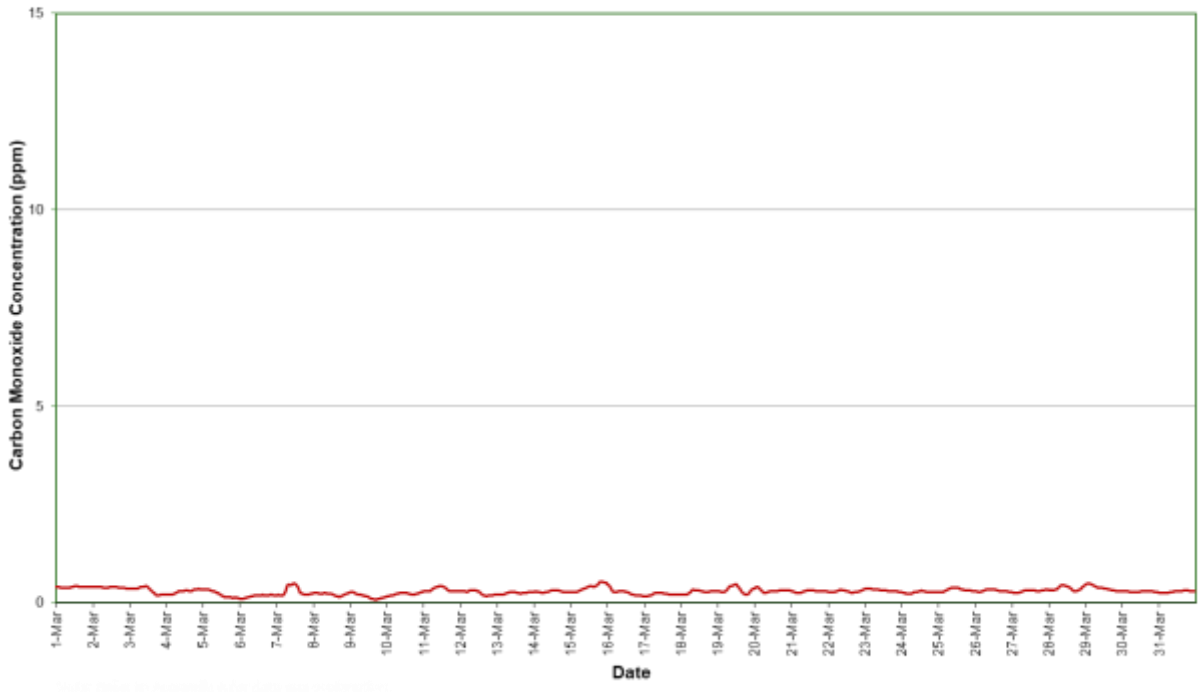

Figure 12: Station 4 CO concentration (8 hour rolling average) – March 2025

6.4 Volatile organic compounds (BTEX)

VOC samples were collected from Station 4 (Primula Avenue), in an evacuated electro-polished and passivated stainless steel canister. Analysis involves separation by gas chromatography (GC) and measurement by mass selective (MS) detector.

The procedure for sampling Volatile Organic Compounds (VOCs) using evacuated canisters, and for the subsequent analysis, is described in USEPA Method TO-15 ”Determination of Volatile Organic Compounds (VOCs) in air collected in specially-prepared canisters and analysed by Gas Chromatography/Mass Spectrometry (GC/MS)”.

Samples were analysed by Queensland Health (NATA Laboratory Accreditation No. 41) based on USEPA method TO-15 (Laboratory Report Nos. SSP92979, SSP93115, SSP93274).

The test method used was in accordance with Golder Source Test Method C9, "Canister (Evacuated) Sampling for VOC: In Ambient Air and Source Emissions".

BTEX (24 hour average) mass concentration statistics for the reporting period are given in Table 17. Laboratory certificates are presented in Appendix B.

Table 17: Station 4 – Primula Avenue AAQMS BTEX concentrations (24 hour average)

Date	Sample no.	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Total xylene isomers (ppb)
6/03/2025	25-201	<0.5	<0.5	<0.5	<1
12/03/2025	25-273	<0.5	1.0	<0.5	<1
18/03/2025	25-274	<0.5	<0.5	<0.5	<1
24/03/2025	25-317	<0.5	<0.5	<0.5	<1
30/03/2025	25-318	<0.5	<0.5	<0.5	<1
NEPM MIL[A]		3.0[B]	1000	-	250
APAC[C]		9	-	5000	2000

Notes: A) National Environment Protection Measure (Air Toxics) Monitoring Investigation Level
B) Annual average
C) EPA Publication 1961 APAC
Sample analysis conducted by Queensland Health, NATA Accreditation No. 41/Eurofins Pty Ltd, NATA Accreditation No. 1261.
Analysis dates: 14/03/2025 (25-201); 25/03/2025 (25-273, 25-274), 10/04/2025 (25-317, 25-318).

6.5 Meteorological parameters

6.5.1 Ambient temperature

Ambient Temperature data for all AAQMS sites are presented in Figure 13 for the reporting period.

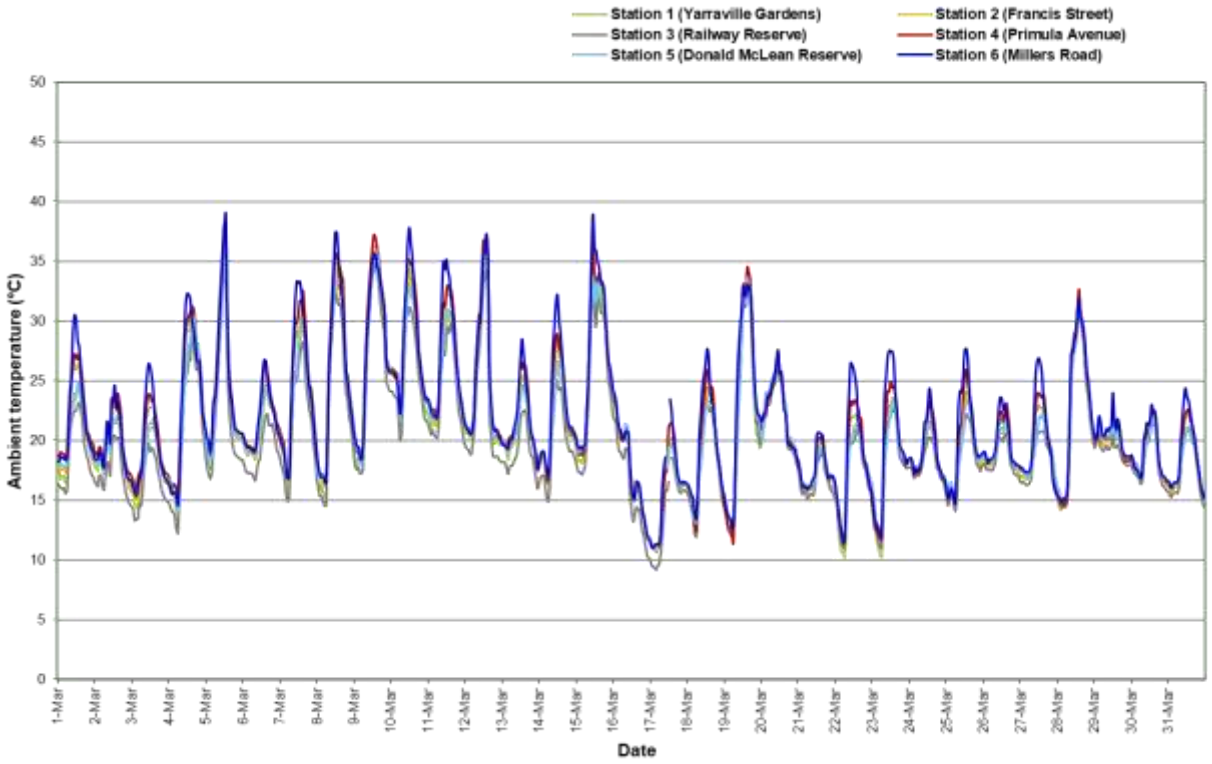

Figure 13: Ambient temperature (1 hour average) All AAQMS – March 2025

6.5.2 Relative humidity

Relative Humidity data for all AAQMS sites are presented in Figure 14 for the reporting period. Relative Humidity at Station 1 (Yarraville Gardens) is periodically impacted by the gardens sprinkler system.

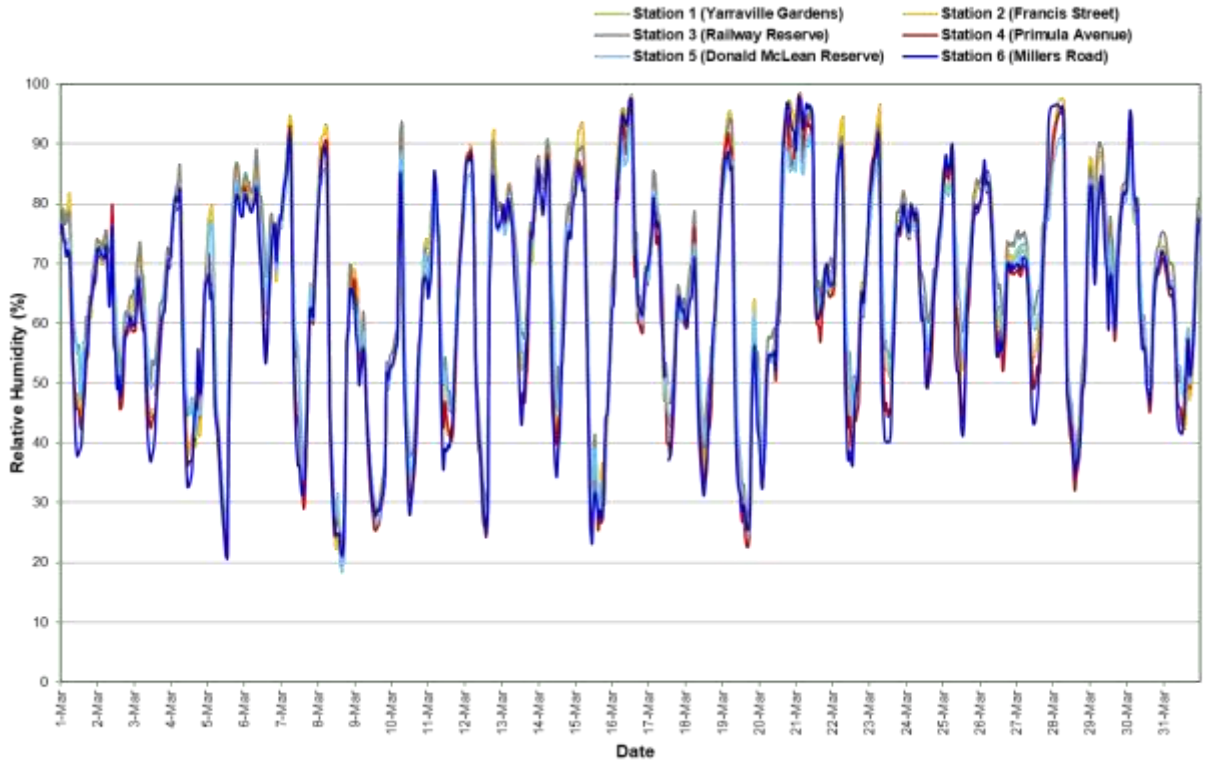

Figure 14: Relative humidity (1 hour average) All AAQMs – March 2025

6.5.3 Atmospheric pressure

Atmospheric pressure data for Station 4 (Primula Avenue AAQMS) is presented in Figure 15 for the reporting period.

Figure 15: Atmospheric pressure (1 hour average) Station 4 Primula Avenue – March 2025

6.5.4 Wind speed

Wind Speed data for all AAQMS sites are presented in Figure 16 for the reporting period.

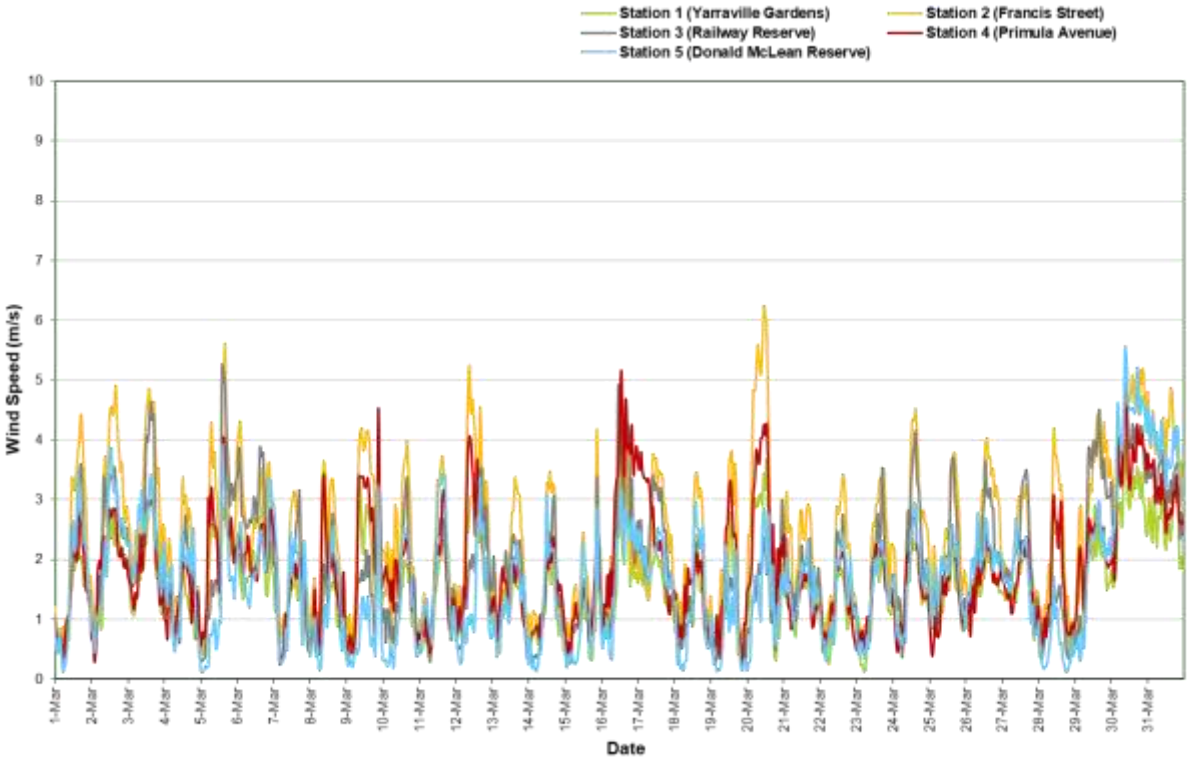

Figure 16: Wind speed (1 hour average) All AAQMs – March 2025

6.5.5 Wind rose – Station 1 (Yarraville Gardens)

A wind rose (1 hour average) for Yarraville Gardens AAQMS is presented in Figure 17.

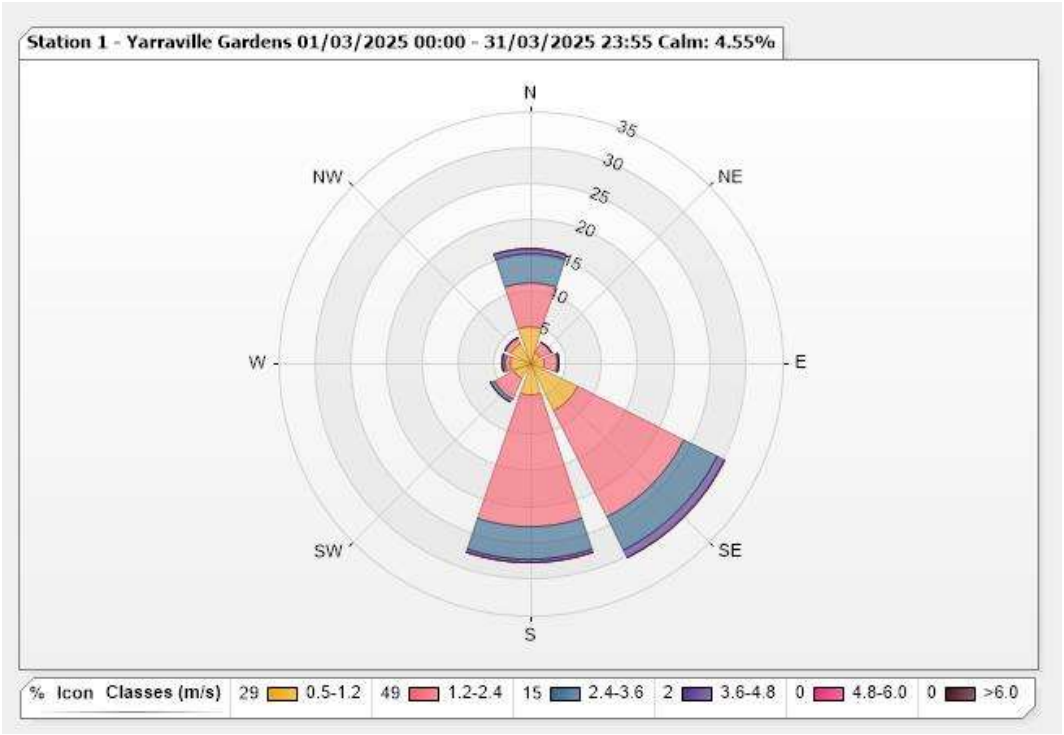

Figure 17: Wind speed (1 hour average) Station 1 – Yarraville Gardens

6.5.6 Wind rose – Station 2 (Francis Street)

A wind rose (1 hour average) for Station 2 (Francis Street AAQMS) is presented in Figure 18.

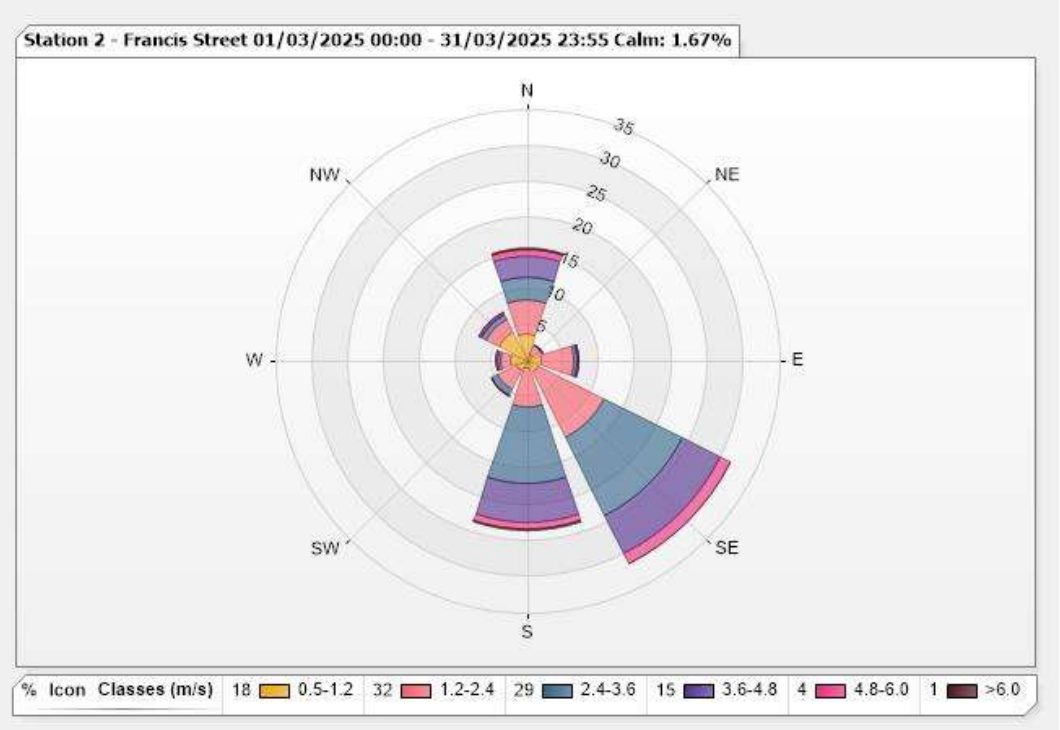

Figure 18: Wind speed (1 hour average) Station 2 – Francis Street

6.5.7 Wind rose – Station 3 (Railway Reserve)

A wind rose (1 hour average) for Station 3 (Railway Reserve AAQMS) is presented in Figure 19.

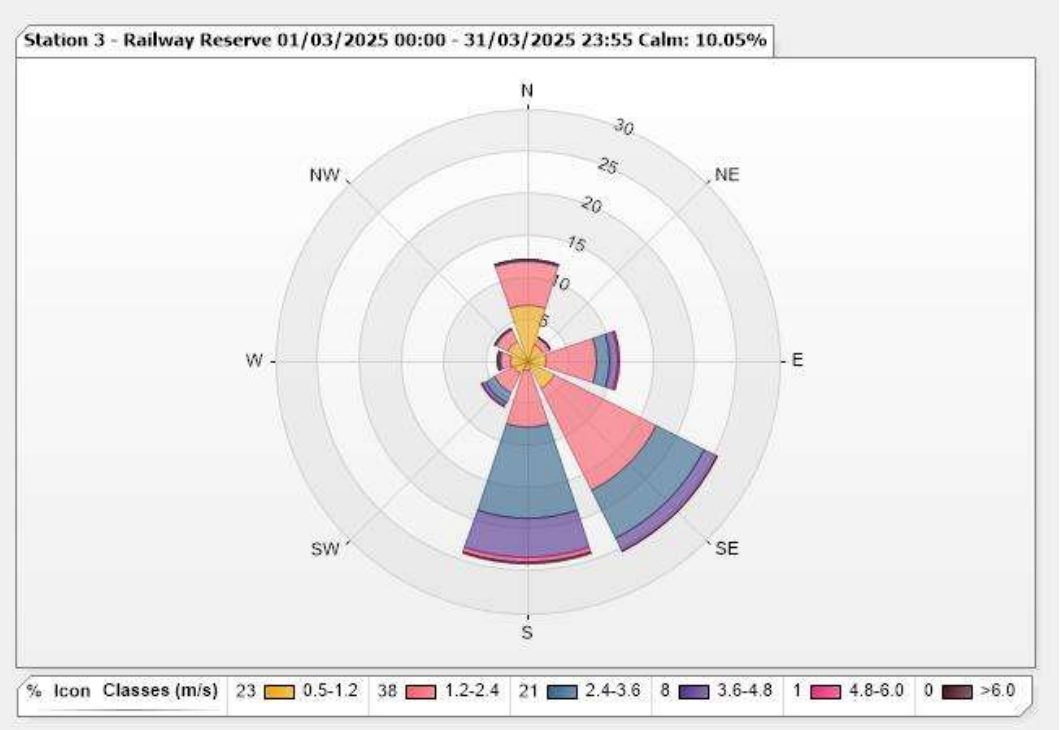

Figure 19: Wind speed (1 hour average) Station 3 – Railway Reserve

6.5.8 Wind rose – Station 4 (Primula Avenue)

A wind rose (1 hour average) for Station 4 (Primula Avenue AAQMS) is presented in Figure 20.

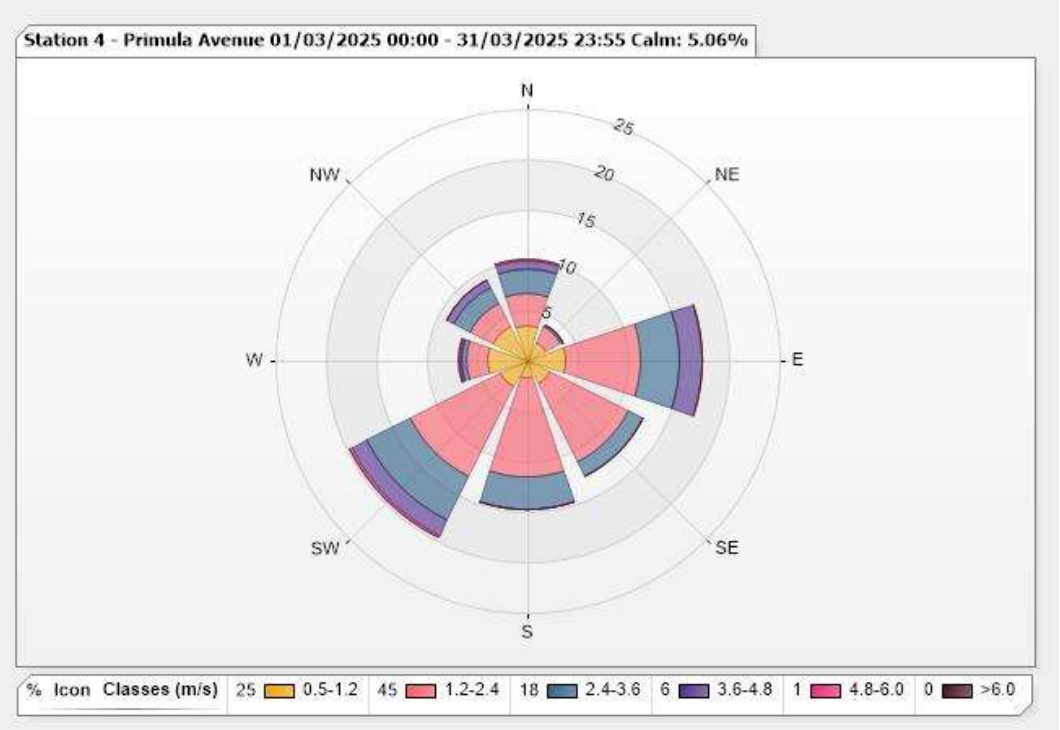

Figure 20: Wind speed (1 hour average) Station 4 – Primula Avenue

6.5.9 Wind rose – Station 5 (Donald McLean Reserve)

A wind rose (1 hour average) for Station 5 (Donald McLean Reserve AAQMS) is presented in Figure 21.

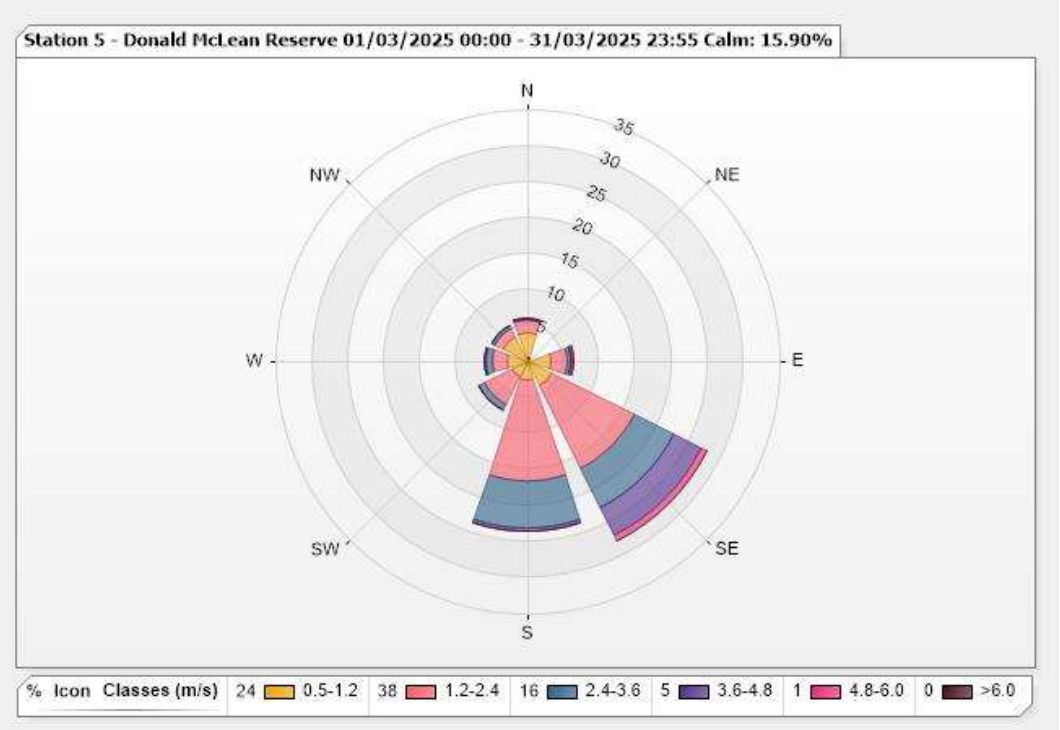

Figure 21: Wind speed (1 hour average) Station 5 – Donald McLean Reserve

7.0 QUALITY ASSURANCE

7.1 Data capture

Data capture is defined as the number of valid data periods collected divided by the number of available data periods. Valid data excludes periods where the instrument is unavailable due to calibration and maintenance and excludes periods where the data has been rejected due to quality assurance/data validation procedures.

Automatic calibrations are conducted for NO_2 and CO daily to monitor and correct instrument drift where necessary. NO_2 and CO automatic calibrations are conducted once per day between 01:00 and 01:45 hours.

Data capture statistics for the reporting period 1 March to 31 March 2025 are shown in Table 18.

Averages were only collected for those periods where the 5 minute data constituted 75% data capture.

Data capture statistics for March 2025 were 90 percent and above for all parameters at all stations.

Table 18: Data capture

Parameter	Averaging period	Station	Collected periods	Available periods	Data capture[A]
$PM_{2.5}$	24 hour	1 – Yarraville Gardens	30	31	97%
	24 hour	2 – Francis Street	31	31	100%
	24 hour	3 – Railway Reserve	31	31	100%
	24 hour	4 – Primula Avenue	31	31	100%
	24 hour	5 – Donald McLean Reserve	31	31	100%
	24 hour	6 – Millers Road	31	31	100%
PM_{10}	24 hour	1 – Yarraville Gardens	31	31	100%
	24 hour	2 – Francis Street	31	31	100%
	24 hour	3 – Railway Reserve	31	31	100%
	24 hour	4 – Primula Avenue	31	31	100%
	24 hour	5 – Donald McLean Reserve	31	31	100%
	24 hour	6 – Millers Road	31	31	100%
NO_2	1 hour	4 – Primula Avenue	710	744	95%
CO	1 hour	4 – Primula Avenue	710	744	95%
Ambient temperature and relative humidity	1 hour	1 – Yarraville Gardens	742	744	100%
	1 hour	2 – Francis Street	743	744	100%
	1 hour	3 – Railway Reserve	743	744	100%
	1 hour	4 – Primula Avenue	741	744	100%
	1 hour	5 – Donald McLean Reserve	743	744	100%
	1 hour	6 – Millers Road	742	744	100%
Atmospheric pressure	1 hour	4 – Primula Avenue	741	744	100%
Wind speed and direction	1 hour	1 – Yarraville Gardens	744	744	100%
	1 hour	2 – Francis Street	744	744	100%
	1 hour	3 – Railway Reserve	744	744	100%
	1 hour	4 – Primula Avenue	744	744	100%
	1 hour	5 – Donald McLean Reserve	743	744	100%

Notes: A) Rounded to two significant figures

7.2 Data validation

Data contained in this report has been validated against performance and calibration requirements for each instrument. Data during commissioning, maintenance, and calibration periods has been removed from the validated data sets. Appendix A lists the data exceptions for all AAQMS. Missing data periods during automatic calibrations of the gaseous atmospheric contaminants NO_2 and CO are not shown.

8.0 DISCUSSION

Table 19 presents the maximum measured concentration during the reporting period at Station 1 for $PM_{2.5}$ and PM_{10} compared with the respective criteria.

Table 20 presents the maximum measured concentration during the reporting period at Station 2, Station 3, Station 5, and Station 6 for $PM_{2.5}$ and PM_{10} compared with the respective criteria.

Table 21 presents maximum measured concentration during the reporting period at Station 4 for $PM_{2.5}$, PM_{10}, NO_2, CO, and BTEX compared with the respective criteria.

The March 2025 ambient air quality monitoring programme results met the respective air quality objectives for all parameters measured at all ambient air quality stations.

Data capture statistics for March 2025 were 90 percent and above for all parameters at all stations.

A construction area (Millers Road exit ramp and noise wall relocation) is now adjacent Station 4, as a result, the measured pollutant concentrations may not be representative of traffic emissions.

Table 19: Station 1 Summary – March 2025

Parameter	Units	Averaging period	Maximum concentration	SEPP Air quality objective[A]	Exceedances[C]	ERS Air quality objective[B] (APAC)	Exceedances[C]
$PM_{2.5}$	µg/m^3	24 hour	13	25	Nil	25	Nil
PM_{10}	µg/m^3	24 hour	34	50	Nil	50	Nil

Notes: A – SEPP(AAQ) objective
B - ERS Air Quality Objective (APAC)
C - Exceedances refers to the number of individual days the criterion was exceeded at any station.

Table 20: Station 2, Station 3, Station 5, and Station 6 Summary – March 2025

Parameter	Units	Averaging period	Maximum concentration				SEPP Air quality objective[A]	Exceedances[C]	ERS Air quality objective[B] (APAC)	Exceedances[C]
			Station 2	Station 3	Station 5	Station 6				
$PM_{2.5}$	µg/m^3	24 hour	17	14	13	14	36	Nil	25	Nil
PM_{10}	µg/m^3	24 hour	45	31	33	47	60	Nil	50	Nil

Notes: A - SEPP(AQM) Intervention level
B - ERS Air Quality Objective (APAC)
C - Exceedances refers to the number of individual days the criterion was exceeded at any station.

Table 21: Station 4 Summary – March 2025

Parameter	Units	Averaging period	Maximum concentration	SEPP Air quality objective	Exceedances[D]	ERS Air quality objective[C] (APAC)	Exceedances[D]
$PM_{2.5}$	µg/m^3	24 hour	13	36[A]	Nil	25[C]	Nil
PM_{10}	µg/m^3	24 hour	34	60[A]	Nil	50[C]	Nil
NO_2	ppb	1 hour	69	140[A]	Nil	80[C]	Nil
CO	ppm	1 hour	1.2	29[A]	Nil	-	-
CO	ppm	8 hour	0.5	-	-	9[C]	Nil
Benzene	ppb	24 hour	<0.5	3[B]	Nil	9[C]	Nil
Ethylbenzene	ppb	24 hour	<0.5	-	-	5000[C]	Nil
Toluene	ppb	24 hour	1.0	1000[B]	Nil	-	-
Total xylene isomers	ppb	24 hour	<1	250[B]	Nil	2000[C]	Nil

Notes: A – SEPP(AQM) Intervention level
B – Air NEPM Monitoring investigation level
C – ERS Air Quality Objective (APAC)
D – Exceedances refers to the number of individual days the criterion was exceeded at any station

9.0 IMPORTANT INFORMATION RELATING TO THIS REPORT

Your attention is drawn to the document titled – “Important Information Relating to this Report”, which is included in Appendix C of this report. The statements presented in that document are intended to inform a reader of the report about its proper use. There are important limitations as to who can use the report and how it can be used. It is important that a reader of the report understands and has realistic expectations about those matters. The Important Information document does not alter the obligations Golder has under the contract between it and its client.

Signature Page

Golder Associates Pty Ltd

Anthony Myszka
Environmental Technician

Mark Tulau
Principal Environmental Scientist – Air and Noise

AM/MDT/hn

APPENDIX A

Data exceptions

Date from	Date to	Station	Parameters	Reason
1/03/2025 12:10	1/03/2025 16:00	4	PM_{10}, $PM_{2.5}$	Stabilisation after power failure
2/03/2025 09:10	2/03/2025 13:50	4	PM_{10}	Invalid data[1]
3/03/2025 10:10	3/03/2025 15:00	4	PM_{10}	Invalid data[1]
3/03/2025 10:55	3/03/2025 11:40	4	CO, NO, NO_2, NO_x	Maintenance / calibration
3/03/2025 13:00	4/03/2025 00:00	1	$PM_{2.5}$	Maintenance / calibration
3/03/2025 16:05	3/03/2025 19:40	4	$PM_{2.5}$	Maintenance / calibration
8/03/2025 11:00	8/03/2025 16:00	6	PM_{10}	Invalid data[1]
10/03/2025 09:20	10/03/2025 14:35	6	PM_{10}	Invalid data[1]
10/03/2025 10:20	10/03/2025 16:00	2	$PM_{2.5}$	Invalid data[1]
13/03/2025 08:00	13/03/2025 09:50	4	CO, NO, NO_2, NO_x	Maintenance / calibration
13/03/2025 09:45	13/03/2025 14:00	4	PM_{10}, $PM_{2.5}$	Maintenance / calibration
16/03/2025 13:25	16/03/2025 19:20	6	$PM_{2.5}$	Invalid data[1]
17/03/2025 09:20	17/03/2025 13:00	5	PM_{10}, $PM_{2.5}$	Maintenance / calibration
17/03/2025 11:40	17/03/2025 14:00	6	PM_{10}, $PM_{2.5}$	Maintenance / calibration
17/03/2025 13:10	17/03/2025 16:00	3	PM_{10}, $PM_{2.5}$	Maintenance / calibration
31/03/2025 09:10	31/03/2025 11:50	2	PM_{10}, $PM_{2.5}$	Maintenance / calibration
31/03/2025 11:10	31/03/2025 14:00	1	PM_{10}, $PM_{2.5}$	Maintenance / calibration

Notes: 1 – In the opinion of the data reviewer

APPENDIX B

Laboratory certificates

Queensland Government

Forensic and Scientific Services

CERTIFICATE OF ANALYSIS

CLIENT:

WSP Golder Associates
Building 7, Botanicca Corporate Park
570 - 588 Swan Street
Richmond VIC 3121

ATTN: Anthony Myszka

CC:

Laboratory Reference	: SSP92979
Client Order Number	: n/a
Quote Number	: n/a
Client Project	: n/a
Client Batch Reference	: PS138652-106
Date Received	: 14-Mar-2025
Date Commenced	: 14-Mar-2025
Laboratory Number/s	: 25KS418-420

Submitting Authority : WSP-Golder Associates

Number of Samples : Three (3) Summa canisters

Reason for Analysis : Analysis of Volatile Organic Compounds (VOCs) in air

Method/s of Analysis : QIS28237 – Identification, confirmation and quantitation of Volatile Organic Compounds (VOCs) by GCMS using an in-house method as per EPA method TO15

Remarks : Sample details and results are summarised in Table 1.

.....
David Pass
Senior Chemist, Organics Laboratory
19th March 2025

NATA Accredited Laboratory 41
Accredited for compliance with ISO/IEC 17025 - Testing

SSP92979

Enquiries **David Pass**
Phone **(+61 7) 3096 2854**
Email **David.Pass@health.qld.gov.au**

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Email FSS@health.qld.gov.au

CERTIFICATE OF ANALYSIS

Laboratory Reference: SSP92979
Laboratory Number: 25KS418-420

Table 1: Results for Summa canister analysis

Client Reference				25-186	25-187	25-201
Sample Type				Silco Canister #2393	Silco Canister #1728	Silco Canister #1745
Sampling Time / Date				n/a	n/a	n/a
Sample Description				ambient air	ambient air	ambient air
Method	Volatile Organic Compounds (VOCs) by GCMS	Units	Reporting Limit	25KS418	25KS419	25KS420
28237	Benzene	ppbv	0.5	< LOR	< LOR	< LOR
28237	Toluene	ppbv	0.5	**0.9**	**0.9**	< LOR
28237	Ethylbenzene	ppbv	0.5	< LOR	< LOR	< LOR
28237	m- & p-Xylene	ppbv	0.5	**0.6**	**0.6**	< LOR
28237	o-Xylene	ppbv	0.5	< LOR	< LOR	< LOR
Sample volume#		L	n/a	5.5	4.6	5.5

Temperature and atmospheric pressure at time of sampling unavailable

Calculated sample volumes are not covered by NATA accreditation

Queensland Government

Forensic and Scientific Services

CERTIFICATE OF ANALYSIS

CLIENT:

WSP Golder Associates
Building 7, Botanicca Corporate Park
570 - 588 Swan Street
Richmond VIC 3121

ATTN: Anthony Myszka

CC:

Laboratory Reference	: SSP93115
Client Order Number	: n/a
Quote Number	: n/a
Client Project	: n/a
Client Batch Reference	: PS138652-106
Date Received	: 24-Mar-2025
Date Commenced	: 25-Mar-2025
Laboratory Number/s	: 25KS447-448

Submitting Authority : WSP-Golder Associates

Number of Samples : Two (2) Summa canisters

Reason for Analysis : Analysis of Volatile Organic Compounds (VOCs) in air

Method/s of Analysis : QIS28237 – Identification, confirmation and quantitation of Volatile Organic Compounds (VOCs) by GCMS using an in-house method as per EPA method TO15

Remarks : Sample details and results are summarised in Table 1.

.....
David Pass
Senior Chemist, Organics Laboratory
8th April 2025

NATA Accredited Laboratory 41
Accredited for compliance with ISO/IEC 17025 - Testing

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Email FSS@health.qld.gov.au

CERTIFICATE OF ANALYSIS

Laboratory Reference: SSP93115
Laboratory Number: 25KS447-448

Table 1: Results for Summa canister analysis

Client Reference				25-273	25-274
Sample Type				Silco Canister #2390	Silco Canister #1737
Sampling Time / Date				n/a	n/a
Sample Description				ambient air	ambient air
Method	Volatile Organic Compounds (VOCs) by GCMS	Units	Reporting Limit	25KS447	25KS448
28237	Benzene	ppbv	0.5	< LOR	< LOR
28237	Toluene	ppbv	0.5	**1.0**	< LOR
28237	Ethylbenzene	ppbv	0.5	< LOR	< LOR
28237	m- & p-Xylene	ppbv	0.5	**0.9**	**0.5**
28237	o-Xylene	ppbv	0.5	< LOR	< LOR
Sample volume#		L	n/a	5.0	5.2

Temperature and atmospheric pressure at time of sampling unavailable

Calculated sample volumes are not covered by NATA accreditation

Queensland Government

Forensic and Scientific Services

CERTIFICATE OF ANALYSIS

CLIENT:

WSP Golder Associates
Building 7, Botanicca Corporate Park
570 - 588 Swan Street
Richmond VIC 3121

ATTN: Anthony Myszka

CC:

Laboratory Reference	: SSP93274
Client Order Number	: n/a
Quote Number	: n/a
Client Project	: n/a
Client Batch Reference	: PS138652-106
Date Received	: 02-Apr-2025
Date Commenced	: 10-Apr-2025
Laboratory Number/s	: 25KS488-489

Submitting Authority : WSP-Golder Associates

Number of Samples : Two (2) Summa canisters

Reason for Analysis : Analysis of Volatile Organic Compounds (VOCs) in air

Method/s of Analysis : QIS28237 – Identification, confirmation and quantitation of Volatile Organic Compounds (VOCs) by GCMS using an in-house method as per EPA method TO15

Remarks : Sample details and results are summarised in Table 1.

.....
David Pass
Senior Chemist, Organics Laboratory
11th April 2025

NATA Accredited Laboratory 41
Accredited for compliance with ISO/IEC 17025 - Testing

SSP93274

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CERTIFICATE OF ANALYSIS

Laboratory Reference: SSP93274
Laboratory Number: 25KS488-489

Table 1: Results for Summa canister analysis

Client Reference				25-317	25-318
Sample Type				Silco Canister #2498	Silco Canister #1738
Sampling Time / Date				n/a	n/a
Sample Description				ambient air	ambient air
Method	Volatile Organic Compounds (VOCs) by GCMS	Units	Reporting Limit	25KS488	25KS489
28237	Benzene	ppbv	0.5	< LOR	< LOR
28237	Toluene	ppbv	0.5	< LOR	< LOR
28237	Ethylbenzene	ppbv	0.5	< LOR	< LOR
28237	m- & p-Xylene	ppbv	0.5	< LOR	< LOR
28237	o-Xylene	ppbv	0.5	< LOR	< LOR
Sample volume#		L	n/a	5.4	5.7

Temperature and atmospheric pressure at time of sampling unavailable

Calculated sample volumes are not covered by NATA accreditation

APPENDIX C

Important information relating to this report

The document ("Report") to which this page is attached and which this page forms a part of, has been issued by Golder Associates Pty Ltd ("Golder") subject to the important limitations and other qualifications set out below.

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