



# Suburban Rail Loop East Early Works Air Quality Monthly Report

19 September 2024 – 18 October 2024



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## Glossary

**$\mu\text{g}/\text{m}^3$**  – micrograms per cubic metre is a unit of measurement used to measure the mass of air pollutants (micrograms) per volume of air (cubic metre) as a concentration.

**Environment Effects Statement (EES)** – In Victoria, environment assessment of the potential environmental impacts or effects of a proposed development under the *Environment Effects Act 1978*.

**Environmental Air Quality and Dust Management Plan (EAQDMP)** – The EAQDMP is environmental management documentation prepared by the MC to manage and monitor air quality impacts during construction of SRL East. It includes the RMMP and TARP and is verified by the IEA.

**Environmental Management Framework (EMF)** – The purpose of the EMF is to provide a transparent and integrated framework to manage environmental effects of the SRL East Project during construction and operation to achieve acceptable environmental outcomes.

**Environmental Performance Requirements (EPRs)** – The EPRs define the environmental outcomes that must be achieved during the design, construction and operation of SRL East and are included within the EMF.

**Environment Protection Authority (EPA)** - Victorian regulator established under the *Environment Protection Act 2017* and which has the statutory objective to protect human health and the environment from the harmful effects of pollution and waste.

**Environmental Reference Standard (ERS)** – The ERS is a tool made under the *Environment Protection Act 2017* to identify and assess environmental values, including air quality, in Victoria.

**Independent Environmental Auditor (IEA)** – The IEA is appointed by the Victorian Government to undertake independent environmental reviews and audits of project activities including assessing compliance with the EMF and EPRs.

**PM<sub>10</sub>** – Particulate matter with an aerodynamic diameter of 10 micrometres ( $\mu\text{m}$ ) or less. PM<sub>10</sub> particles are small enough to have a potential impact on human health.

**Risk Management and Monitoring Program (RMMP)** – this plan outlines the approach to air quality monitoring and includes instrumental, visual monitoring, TARP and public reporting processes. The RMMP forms part of the EAQDMP.

**Trigger Action Response Protocol (TARP)** – The TARP defines a series of adaptive management measures that are implemented to avoid or mitigate impacts from dust emissions for nearby sensitive receptors in response to the results from monitoring. The TARP forms part of the EAQDMP.

## Executive Summary

### Key Outcomes

Key outcomes arising from the monthly air quality monitoring program:

- In Box Hill, the TARP was implemented on six days during the reporting period. Water carts and hoses were used proactively to suppress any dust during concrete cutting and spoil haulage. Dust was also reduced by street sweeping and trucks covering loads prior to leaving the site.
- In Burwood, the TARP was not implemented during the reporting period. Water carts and hoses were used during material and spoil haulage, and dust was reduced by street sweeping and requiring trucks to cover loads prior to leaving the site.
- In Glen Waverley, the TARP was implemented on two days during the reporting period. Water carts and hoses were used during spoil haulage and handling of materials, and dust was reduced by street sweeping, covering temporary stockpiles and requiring trucks to cover loads prior to leaving the site.
- In Monash, the TARP was not implemented during the reporting period. The water cart and handheld hoses were used proactively and reactively to suppress dust.
- In Clayton, the TARP was implemented on eight days during the reporting period. Water carts and hoses were used during material and spoil haulage, and dust was reduced by street sweeping and requiring trucks to cover loads prior to leaving the site.
- In Heatherton, the TARP was implemented on four days during the reporting period. High winds were experienced during this time. The water cart was used proactively and reactively to suppress dust.

No works took place at Cheltenham during the reporting period, therefore no monitoring was required. Monitoring will resume before works recommence in late 2024.

Further explanation is provided in Section 3 regarding these observations.

### Purpose of the Report

This report presents the results of the monthly review of the air quality monitoring data for each Suburban Rail Loop (SRL) East Early Works construction site for the period between 19 September 2024 and 18 October 2024 in accordance with SRL East EMF and EPRs AQ1 and AQ2. Laing O'Rourke is delivering the Early Works as Managing Contractor (MC). Early Works for SRL East commenced at Burwood in May 2023, Box Hill in June 2023, Monash and Heatherton in October 2023, Clayton in December 2023, and Glen Waverley and Cheltenham in March 2024.

The MC implements an air quality monitoring program on each site that includes both visual observation and instrumental air quality monitoring. The purpose of the air quality monitors is to measure the concentration of small dust particles in the air near the construction site. These particles, known as PM<sub>10</sub>, have the potential to impact human health. PM<sub>10</sub> refers to particles with an aerodynamic diameter of 10 µm or less.

Measured PM<sub>10</sub> concentrations may be compared to air quality objectives that are defined in the ERS which is a tool under the *Environment Protection Act 2017*. The ERS sets out the air quality objectives for PM<sub>10</sub> which are measured over a 24-hour averaging period. The objectives are risk-based concentrations that are not intended to be compliance levels, but they assist the MC to understand the risk to human health. When the instrumental monitor and/or visual observations identify a change in site conditions this prompts the MC to implement mitigations on site to reduce dust impacts, and review measures applied.

### Scope of Reporting

This report does not include works delivered as SRL Initial Works. The SRL Initial Works, which include investigative works, protective works, moving underground services, ground improvement works (such as at the Stabling Facility at Heatherton) and minor road modifications were subject to a separate approval process under Clause 52.30 of the Victoria Planning Provisions (VPP) and were approved by the Minister for Planning on 19 December 2021. These works are required to comply with Clause 52.30 of the VPP and are not subject to the EMF and EPRs.

This report does not include monitoring related to asbestos containing material removal, which is monitored and reported separately.

## Results

The key findings are summarised in Table 1. An analysis of these findings is provided in Section 3.

Table 1: Summary of air quality monitoring results for reporting period.

Location	Parameter	Averaging Period	Max Concentration ( $\mu\text{g}/\text{m}^3$ )	Median Concentration ( $\mu\text{g}/\text{m}^3$ )	Days TARP Implemented in the Month
Representative Background <sup>1</sup>					
Alphington	PM <sub>10</sub>	24-hour	27.0	15.9	-
Dandenong	PM <sub>10</sub>	24-hour	31.7	18.4	-
Box Hill					
Site Office	PM <sub>10</sub>	24-hour	40.2	5.7	
East of Market Street	PM <sub>10</sub>	24-hour	41.3	16.5	6
Uniting AgeWell (UAW)	PM <sub>10</sub>	24-hour	37.8	9.0	
Irving Avenue	PM <sub>10</sub>	24-hour	3.1	0.5	
Burwood					
Corner of McComas Grove and Sinnott Street	PM <sub>10</sub>	24-hour	33.5	15.3	
16 McComas Grove	PM <sub>10</sub>	24-hour	32.1	3.7	
Site 4 – East	PM <sub>10</sub>	24-hour	20.5	8.5	0
Site 4 – West	PM <sub>10</sub>	24-hour	43.1	17.2	
Site 1 – South	PM <sub>10</sub>	24-hour	39.4	21.6	
Bennettswood Reserve	PM <sub>10</sub>	24-hour	58.6	15.5	
Glen Waverley					
Myrtle/Montclair	PM <sub>10</sub>	24-hour	46.1	18.8	2
Railway Parade	PM <sub>10</sub>	24-hour	31.4	9.6	
Monash					
Site Office	PM <sub>10</sub>	24-hour	37.7	13.7	0
Daycare	PM <sub>10</sub>	24-hour	15.7	12.4	
Clayton					
C&S Delta Hospital	PM <sub>10</sub>	24-hour	56.4	17.6	
Remembrance Gardens	PM <sub>10</sub>	24-hour	49	26.8	
Cycon	PM <sub>10</sub>	24-hour	5.8	0.8	8
Clayton Community Space – Site 1	PM <sub>10</sub>	24-hour	37.3	18.6	
Heatherton					
SSY - South	PM <sub>10</sub>	24-hour	73.4	31.3	4

<sup>1</sup> The EPA monitoring station at Dandenong is used as the representative control site for Cheltenham and Heatherton. The EPA monitoring station at Alphington is used as the representative control site for Clayton, Monash, Glen Waverley, Burwood and Box Hill.



Location	Parameter	Averaging Period	Max Concentration ( $\mu\text{g}/\text{m}^3$ )	Median Concentration ( $\mu\text{g}/\text{m}^3$ )	Days TARP Implemented in the Month
Site Office	PM <sub>10</sub>	24-hour	5.9	0.5	
Henry Street	PM <sub>10</sub>	24-hour	77.7	18.7	

# 1. Introduction

## 1.1. Suburban Rail Loop East

SRL will deliver a 90km rail line linking every major suburban line from the Frankston Line to the Werribee Line via Melbourne Airport, better connecting Victorians to jobs, retail, education, health services and each other. Construction of SRL East from Cheltenham to Box Hill is underway and will connect major employment, health, education and retail destinations in Melbourne's east and south-east. The new underground train line will reduce travel times, and connect people travelling on the Gippsland corridor. Construction of SRL East is creating up to 8000 direct local jobs, with trains to be running in 2035.

Early Works for SRL East commenced at Burwood in May 2023, Box Hill in June 2023, Monash and Heatherton in October 2023, Clayton in December 2023, Glen Waverley and Cheltenham in March 2024. Laing O'Rourke is delivering the Early Works as MC. Early Works include:

- Road modifications
- Moving underground services
- Ground improvement works
- Tram terminus works, and
- Site preparations for tunnel boring machines.

This report does not include works delivered as SRL Initial Works. The SRL Initial Works, which includes investigative works, protective works, utility relocations and installations, ground improvement works (such as at the Stabling Facility at Heatherton) and minor road modifications, were subject to a separate approval process under Clause 52.30 of the VPP and were approved by the Minister for Planning on 19 December 2021. These works are required to comply with Clause 52.30 of the VPP and are not subject to the EMF and EPRs.

## 1.2. Environmental Management Framework

The EMF for SRL East (the Project) provides a transparent and integrated framework to manage environmental effects of the Project and includes EPRs that define environmental outcomes that must be achieved during the design, construction, and operation phases the SRL East website at <https://bigbuild.vic.gov.au/library/suburban-rail-loop/planning/srl-east-environmental-management-framework>.

The development of the EMF has been informed by relevant legislation, policy and guidelines, and the specialist impact assessment studies completed for the SRL East EES and the Minister's Assessment, dated 5 August 2022.

The EMF requires the MC to develop and implement an EAQDMP. As part of implementing this plan, the MC is required to conduct monitoring of PM<sub>10</sub> concentrations and measure wind speed and direction at each Early Works construction site and at a representative control site. The EAQDMP also includes a TARP which defines a set of triggers that prompt actions on site to reduce dust impacts, and review mitigation measures applied. The EMF, and therefore this report, is not applicable to SRL Initial Works activities.

The MC regularly reviews the monitoring data at each site, for the purpose of assessing the effectiveness of EAQDMP implementation. The verified results of the PM<sub>10</sub> monitoring for the applicable monthly period are contained in this report, which will be available to the public, in accordance with the requirements of the EMF.

## 2. Air Quality Monitoring

### 2.1. Context

Maintaining air quality is important for public health, the liveability of our cities and our environment. Overall air quality conditions in Melbourne are good, however like all major cities, there are days where the background concentrations of air pollutants are very high on a regional basis. Sometimes these elevated concentrations are due to regional influences such as windblown continental dust, bushfires or hazard reduction burns. Emissions from traffic, home heating, and industrial emissions across Melbourne can also cause high background concentrations, especially when the weather is calm. EPA monitoring stations measure these background levels of pollution that already exist in the air within the surrounding area. The EPA monitoring station at Dandenong is used as the representative control site for Heatherton and Cheltenham, and the EPA monitoring station at Alphington is used as the representative control site for all other SRL work sites.

Without effective management, construction of the Project has the potential to contribute to these background concentrations which may impact public health. Comparison of SRL East monitoring results with publicly available EPA monitoring data is used by the MC to identify when construction-related activities are impacting local air quality, and conversely when the local air quality results may be influenced by background conditions outside of the influence of the construction site.

Meteorological conditions such as wind direction and speed can impact on the dispersion of particulates in the air and by monitoring these, the MC can respond when conditions on site change. Having records of wind conditions is also helpful for retrospectively identifying the activity that is causing any elevated dust concentrations.

### 2.2. Purpose

The purpose of the air quality monitors is to measure the concentration of small dust particles in the air near the construction site. These particles, known as PM<sub>10</sub> have the potential to impact human health. PM<sub>10</sub> refers to particles with an aerodynamic diameter of 10 µm or less.

The measured concentrations are compared to air quality objectives that are defined in the ERS which is a tool under the *Environment Protection Act 2017*. The air quality objectives defined in the ERS informed the objectives for air quality for the Project, noting that the ambient air ERS is not a compliance standard that one can pollute up to. The ERS does not provide an indicator or objective for nuisance dust.

The objectives are risk-based concentrations that are not intended to be compliance levels, but they assist the MC to understand the risk to human health. The ERS sets out the air quality objectives for PM<sub>10</sub> which are measured over a 24-hour averaging period, as reproduced below in Table 2.

Table 2: Ambient air quality objectives for PM<sub>10</sub>.

Indicator	Air Quality Objective (µg/m <sup>3</sup> )	Averaging Period
Particles as PM <sub>10</sub> (maximum concentration)	50	24-hour

The measured concentrations (which include both existing background concentrations and the Project's incremental contribution over a 24-hour period) are presented in Section 3. Monitoring is continuous, even when there are no construction-related activities occurring on the site. Periods of time where there are no site activities are classified as 'Out of Hours'. The potential for dust generation from the work sites is much lower when there are no site activities occurring, however dust can still be generated at the work site during "Out of Hours" periods due to wind erosion.



## 2.3. Monitoring Locations

Air quality monitors are located on or adjacent to the Early Works construction sites, to represent local air quality conditions, in positions that enable the MC to adequately measure potential impact of works on local sensitive receivers including residents. This does not include monitoring undertaken as part of the SRL Initial Works as outlined in Section 1.1.

The air quality monitors were installed on the following dates at each of the following locations. The location of these monitors is shown on maps in Section 3 of this Report.

Table 3: Air quality monitoring locations active during reporting period.

Monitoring Location	Date Commissioned	Coordinates	Monitoring Parameters	Representative Control Site
Box Hill – Site Office	07 Jul 2023	Latitude: -37.817863° Longitude: 145.12187°	PM <sub>10</sub>	Alphington EPA monitoring station
Box Hill – East of Market Street	13 Jul 2023	Latitude -37.818073° Longitude: 145.1232°	PM <sub>10</sub>	Alphington EPA monitoring station
Box Hill – UAW	01 August 2024	Latitude -37.81479° Longitude: 145.12424°	PM <sub>10</sub>	Alphington EPA monitoring station
Box Hill – Irving Avenue	01 August 2024	Latitude -37.815964° Longitude: 145.12355°	PM <sub>10</sub>	Alphington EPA monitoring station
Burwood – 16 McComas Grove	18 May 2023	Latitude: -37.851494° Longitude: 145.1116°	PM <sub>10</sub>	Alphington EPA monitoring station
Burwood – Site 4 – West	16 February 2024	Latitude: -37.850521° Longitude: 145.11009°	PM <sub>10</sub>	Alphington EPA monitoring station
Burwood – Site 4 – East	20 February 2024	Latitude: -37.850586° Longitude: 145.11188	PM <sub>10</sub>	Alphington EPA monitoring station
Burwood – Corner of McComas Grove and Sinnott Street	18 May 2023	Latitude: - 37.852413° Longitude: 145.11252°	PM <sub>10</sub>	Alphington EPA monitoring station
Burwood – Site 1 South	08 May 2024	Latitude: -37.8549° Longitude: 145.10995°	PM <sub>10</sub>	Alphington EPA monitoring station
Burwood – Bennettswood Reserve	24 July 2024	Latitude: -37.84921° Longitude: 145.1117°	PM <sub>10</sub>	Alphington EPA monitoring station
Glen Waverley – Railway Parade	09 August 2024	Latitude: -37.878888° Longitude: 145.161078°	PM <sub>10</sub>	Alphington EPA monitoring station
Glen Waverley – Myrtle/Montclair	19 August 2024	Latitude: -37.880739° Longitude: 145.160738°	PM <sub>10</sub>	Alphington EPA monitoring station
Monash – Site Office	16 October 2023	Latitude: -37.9024° Longitude: 145.13815°	PM <sub>10</sub>	Alphington EPA monitoring station
Monash – Daycare	17 October 2024	Latitude: -37.90497° Longitude: 145.139°	PM <sub>10</sub>	Alphington EPA monitoring station
Clayton – C&S Delta Hospital	26 August 2024	Latitude: -37.92124° Longitude: 145.1203°	PM <sub>10</sub>	Alphington EPA monitoring station
Clayton – Remembrance Gardens	03 May 2024	Latitude: -37.92301° Longitude: 145.12056°	PM <sub>10</sub>	Alphington EPA monitoring station
Clayton – Cycon	13 July 2024	Latitude: -37.92458° Longitude: 145.1198°	PM <sub>10</sub>	Alphington EPA monitoring station
Clayton – Clayton Community Space Site 1	28 August 2024	Latitude: -37.92484° Longitude: 145.1207°	PM <sub>10</sub>	Alphington EPA monitoring station
Heatherston – SSY – South	29 May 2023	Latitude: -37.955917° Longitude: 145.10239°	PM <sub>10</sub>	Dandenong EPA monitoring station
Heatherston – SSY – Site Office	22 January 2024	Latitude: -37.95401° Longitude: 145.10062°	PM <sub>10</sub>	Dandenong EPA monitoring station

Monitoring Location	Date Commissioned	Coordinates	Monitoring Parameters	Representative Control Site
Heatherton – SSY – Henry St	26 August 2024	Latitude: -37.95155° Longitude: 145.1005°	PM <sub>10</sub>	Dandenong EPA monitoring station

## 2.4 Data Limitations and Verification

The following limitations apply to this data:

- Meteorological conditions on site can affect measurements made by monitoring devices. For instance, dust measurements can be impacted by rainfall, fog and/or humidity (with water droplets in the air being mistaken as dust particles). Displaying periods of inclement weather allows reviewers to identify measurements that may have been impacted.
- The monitors that measure dust concentrations and noise are located within the construction site close to the nearest homes. However, the measured levels at the nearest homes and beyond are usually less than what is measured by the monitor. This is due to the monitor being located closer to the source, due to the security requirements for the monitoring equipment.
- Monitors have been placed to record air quality and airborne noise at each site, however monitors may need to be moved as works progress. Air Quality monitoring devices are located in accordance with AS/NZS 3580.1.1-2016: Methods for sampling and analysis of ambient air (the Standard). This Standard specifies that locations must be representative of the location being monitored, which in this case is offsite receptors. Specifically, Section 7 of the Standard emphasises that locations should not be unduly influenced by immediate surroundings. Locating a monitoring device too close to the works results in increased readings as the space for air quality pollutants (i.e. dust) to dissipate is not representative of emissions at the offsite receptors. Therefore, depending on the location of the works on site and the monitoring device, the device may be moved to best represent impacts to offsite receptors, while also maintaining security and safe access.
- Breaks in data availability may occur due to sensor outages, instrument errors, technical issues, or removal of sensors during non-working periods to ensure the security of the equipment.

Data are provided in tabular and graphical form in Section 3 to visually present 24-hour averages of PM<sub>10</sub> over the monthly period. The data included in this report have been verified by the MC and relevant subject matter experts.

### 3. Results

Data is provided in graphical form below to visually present 24-hour averages of PM<sub>10</sub> dust concentration over the monthly period for each active construction site. Where the TARP has been implemented due to works occurring on the construction sites, an analysis is presented for discussion.

#### 3.1. Box Hill



Figure 1: Box Hill air quality monitoring stations.

Table 4: Box Hill PM<sub>10</sub> results.

Monitor Number	Monitoring Location	Max Daily PM <sub>10</sub> Concentration (µg/m <sup>3</sup> )	Median Daily PM <sub>10</sub> Concentration (µg/m <sup>3</sup> )	Days TARP Implemented in the Month
-	Representative Background - Alphington	27.0	15.9	-
1	Site Office	40.2	5.7	6
2	East of Market Street	41.3	16.5	
3	Uniting AgeWell	37.8	9.0	
4	Irving Avenue	3.1	0.5	

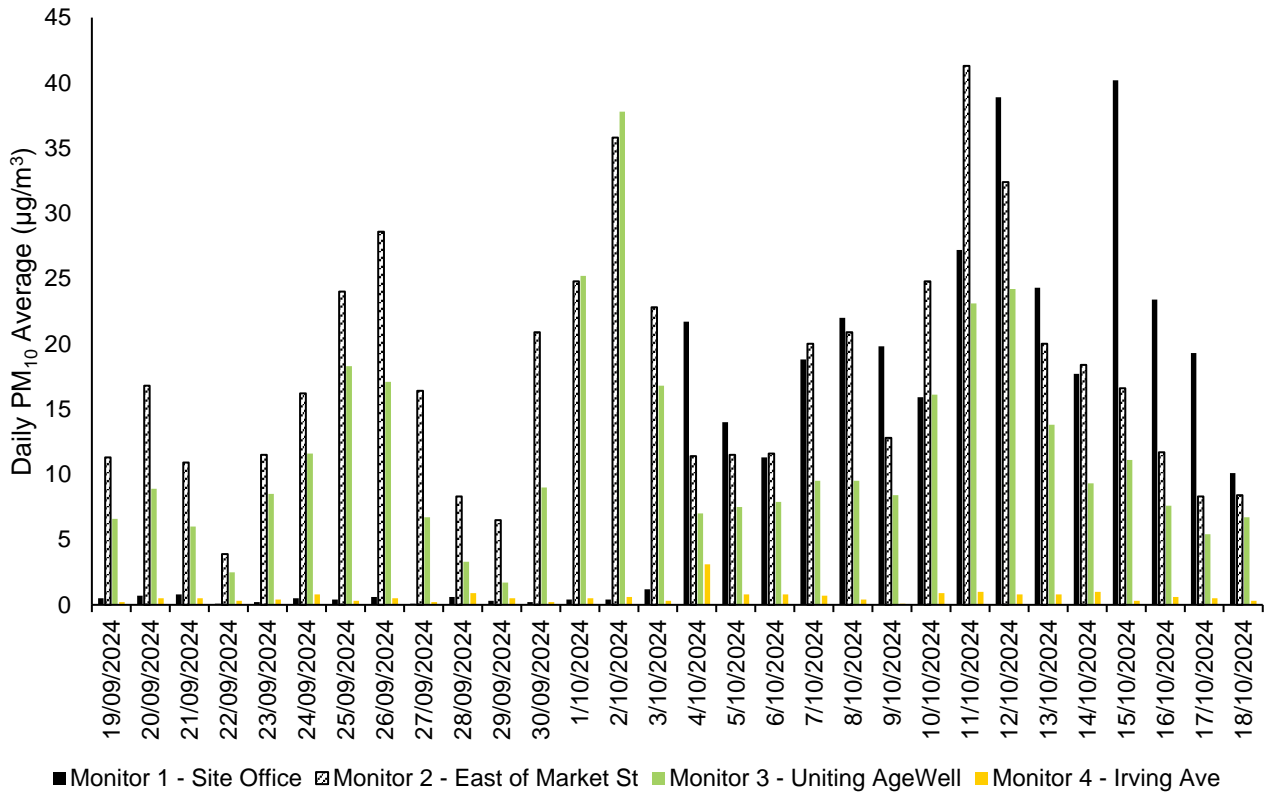


Figure 2: Box Hill PM<sub>10</sub> daily averages

### 3.1.1. Analysis

The maximum daily average PM<sub>10</sub> concentrations were 40.2 µg/m<sup>3</sup> (n = 30)<sup>2</sup>, 41.3 µg/m<sup>3</sup> (n = 30), 37.8 µg/m<sup>3</sup> (n = 30), and 3.1 µg/m<sup>3</sup> (n = 30) at the monitoring stations located at the Site Office (Monitor 1), East of Market Street (Monitor 2), Uniting AgeWell (Monitor 3) and Irving Avenue (Monitor 4) respectively.

The TARP was implemented on six days during the reporting period. Dust generated from concrete cutting and spoil haulage activities was suppressed using water carts and hoses. Additional control measures implemented included street sweepers regularly visiting the site and ensuring trucks covered their loads prior to leaving the site.

<sup>2</sup> n = the number of days of monitoring data captured in the monitoring period.



### 3.2. Burwood

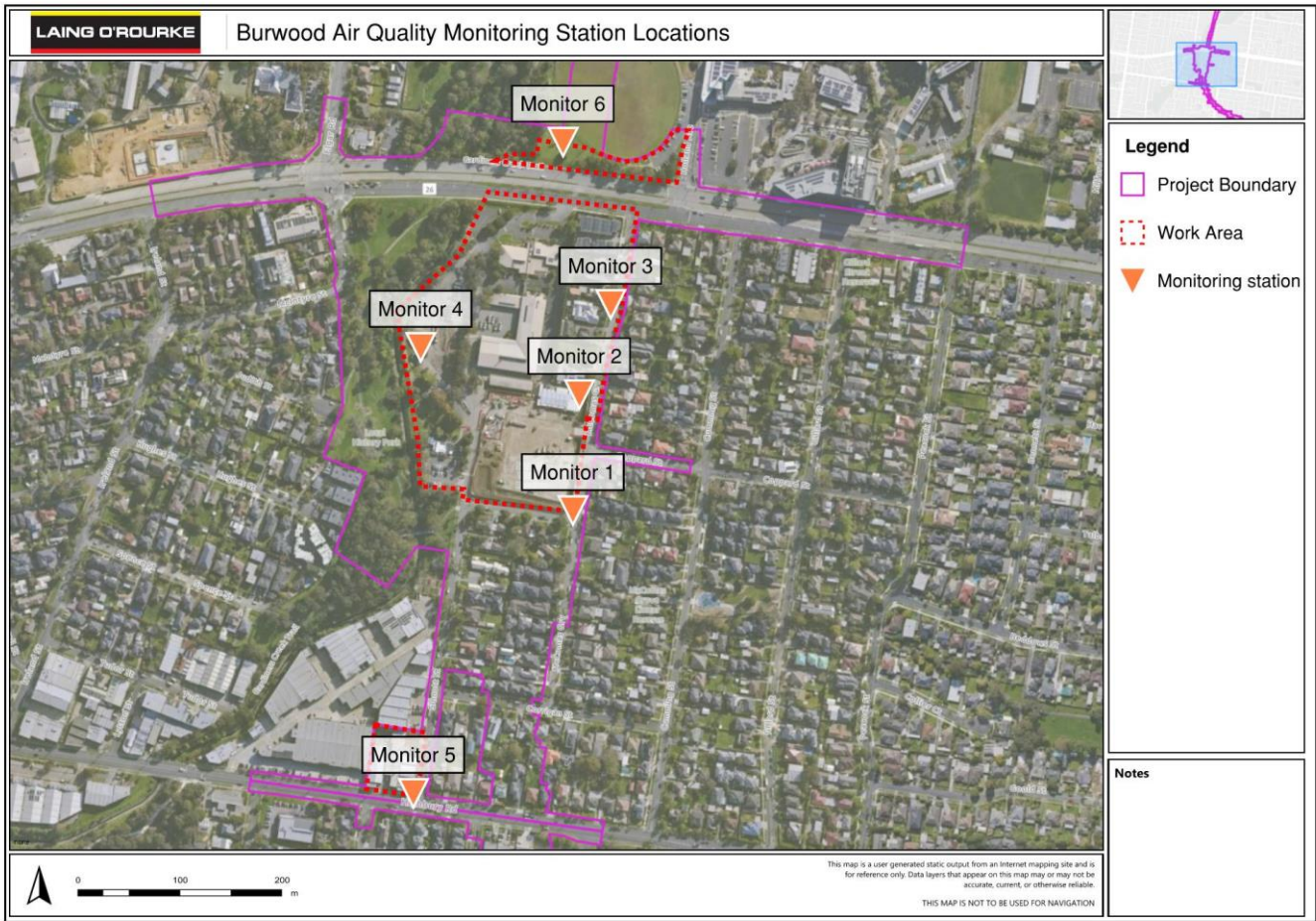


Figure 3: Burwood air quality monitoring stations.

Table 5: Burwood PM<sub>10</sub> results.

Monitor Number	Monitoring Location	Max Daily PM <sub>10</sub> Concentration (µg/m <sup>3</sup> )	Median Daily PM <sub>10</sub> Concentration (µg/m <sup>3</sup> )	Days TARP Implemented in the Month
-	Representative Background - Alphington	27.0	15.9	-
1	Corner of McComas Grove and Sinnott Street	33.5	15.3	
2	16 McComas Grove	32.1	3.7	
3	Site 4 - East	20.5	8.5	0
4	Site 4 – West	43.1	17.2	
5	Site 1 – South	39.4	21.6	
6	Bennettswood Reserve	58.6	15.5	

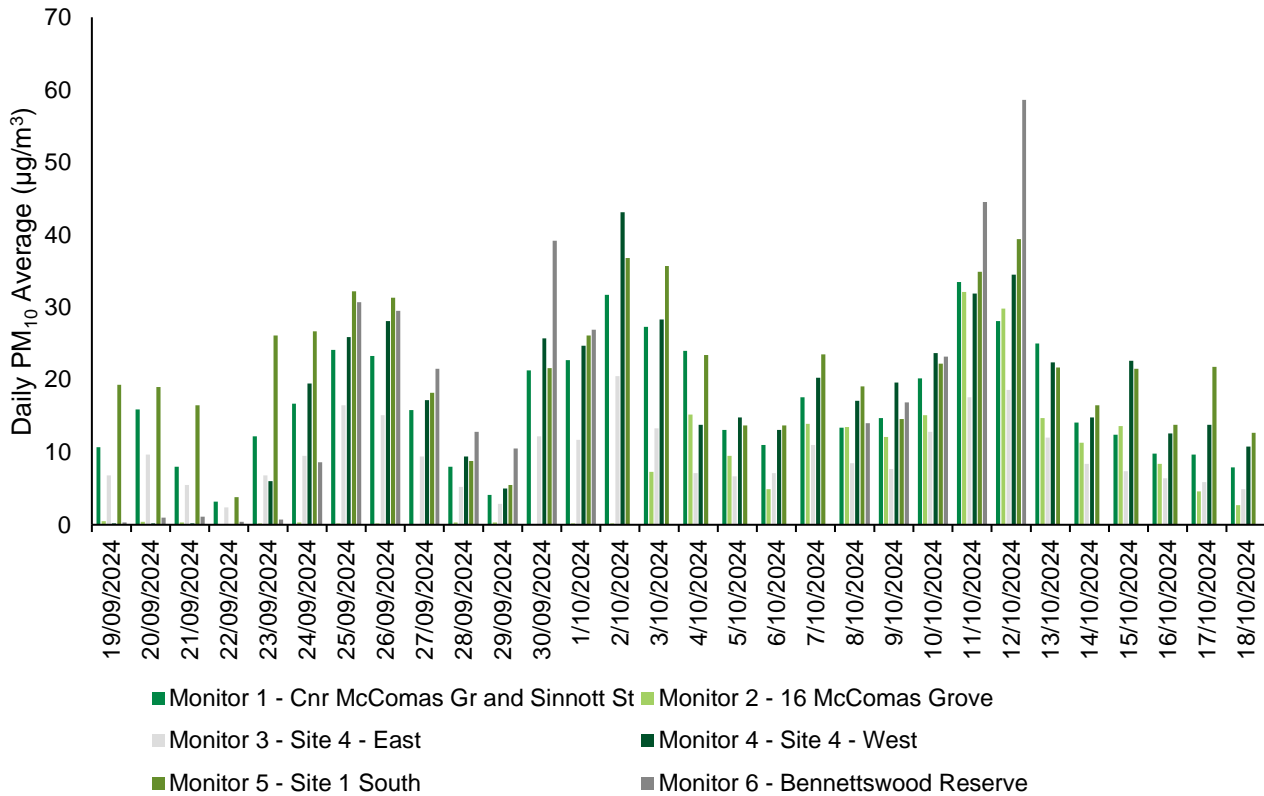


Figure 4: Burwood PM<sub>10</sub> daily averages

### 3.2.1. Analysis

The maximum daily average PM<sub>10</sub> concentrations reported at the Burwood monitoring stations were 33.5 µg/m<sup>3</sup> (n = 30) at the corner of McComas Grove and Sinnott Street (Monitor 1), 32.1 µg/m<sup>3</sup> (n = 30) at 16 McComas Grove (Monitor 2), 20.5 µg/m<sup>3</sup> (n = 30) at Site 4 – East (Monitor 3), 43.1 µg/m<sup>3</sup> (n = 30) at Site 4 – West (Monitor 4), 39.4 µg/m<sup>3</sup> (n = 30) at Site 1 South (Monitor 5), and 58.6 µg/m<sup>3</sup> (n = 18) at Bennettswood Reserve (Monitor 6).

The TARP was not implemented during this reporting period because regular dust suppression activities, including the use of water carts and hoses, were sufficient to maintain air quality levels. Dust generation from spoil haulage was reduced by requiring trucks to cover loads prior to leaving the site.

During the reporting period, the water cart was used both proactively and reactively to reduce dust. Stockpiles of soil and rock were maintained below the top of the hoarding to minimise the risk of dust leaving the site. Additionally, stockpiles were routinely dampened to prevent dust emissions.



### 3.3. Glen Waverley



Figure 5: Glen Waverley air quality monitoring stations.

Table 6: Glen Waverley PM<sub>10</sub> results.

Monitor Number	Monitoring Location	Max Daily PM <sub>10</sub> Concentration (µg/m <sup>3</sup> )	Median Daily PM <sub>10</sub> Concentration (µg/m <sup>3</sup> )	Days TARP Implemented in the Month
-	Representative Background - Alphington	27.0	15.9	-
1	Myrtle/Montclair	46.1	18.8	2
2	Railway Parade	31.4	9.6	

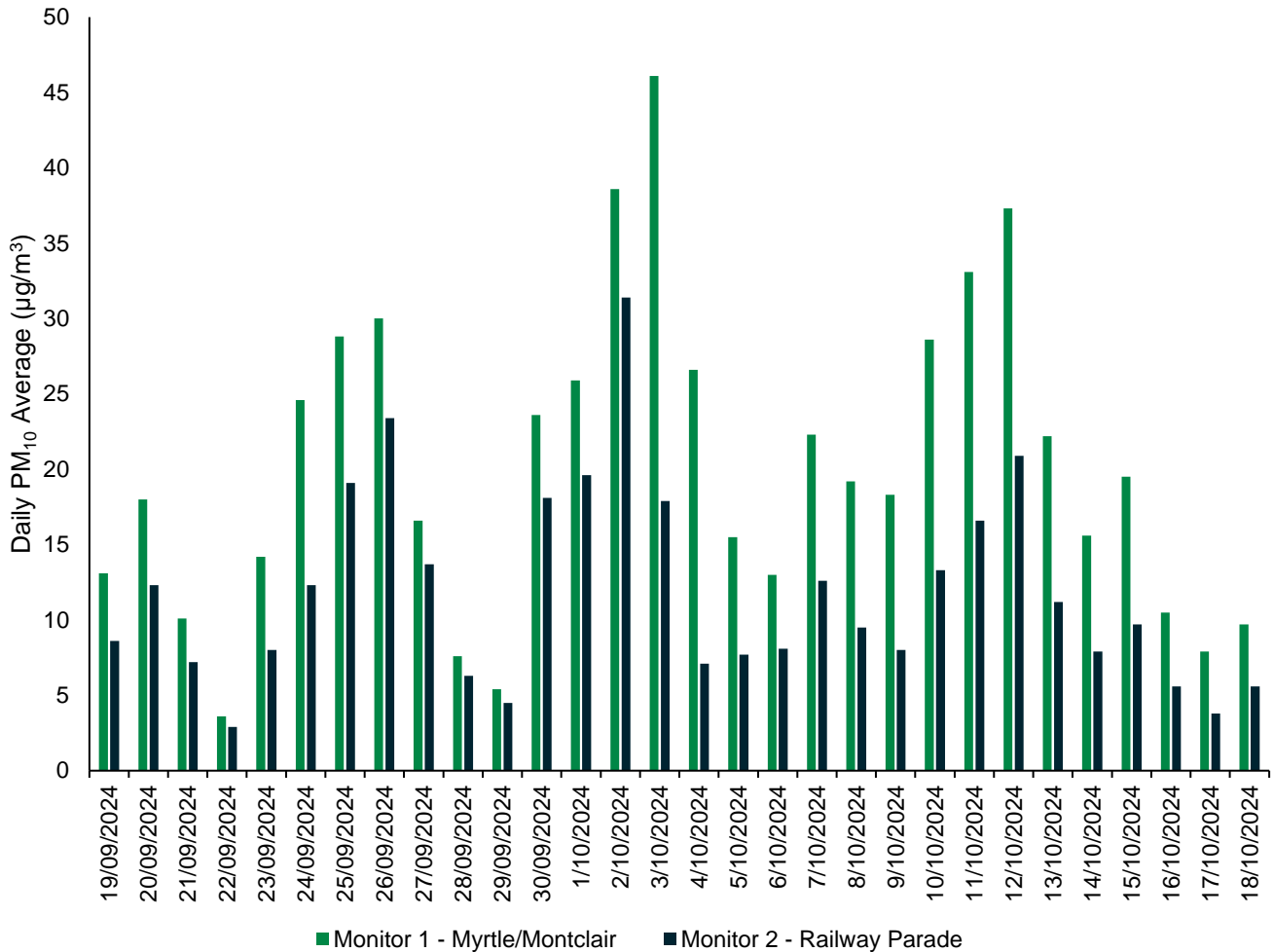


Figure 6: Glen Waverley PM<sub>10</sub> daily averages

### 3.3.1. Analysis

The maximum daily average PM<sub>10</sub> concentrations were 46.1 µg/m<sup>3</sup> (n = 30), and 31.4 µg/m<sup>3</sup> (n = 30) at the monitoring locations at Myrtle/Montclair (Monitor 1) and Railway Parade (Monitor 2), respectively.

The TARP was implemented on two days during the reporting period. Dust generated from spoil haulage was reduced by street sweepers visiting the site regularly and requiring trucks to cover loads prior to leaving the site. Dust generated from earthworks was suppressed by using hoses. Exposed materials such as crushed rock and soil stockpiles were covered on windy days. During the reporting period, the water cart was used both proactively and reactively to reduce dust.

Regular site inspections support this data as no dust was observed to be leaving the site boundaries.

### 3.4. Monash

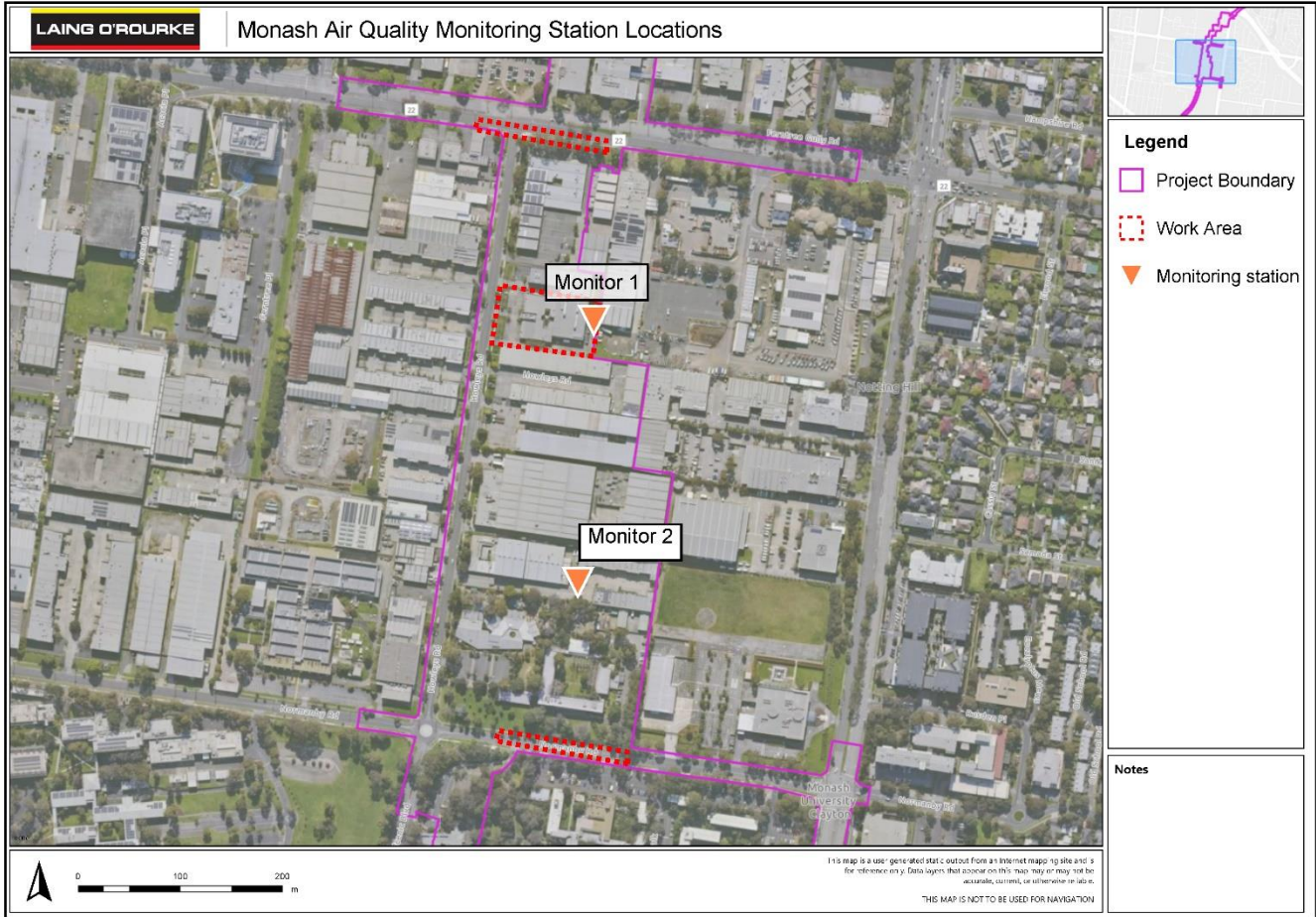


Figure 7: Monash air quality monitoring stations.

Table 7: Monash PM<sub>10</sub> results.

Monitor Number	Monitoring Location	Max Daily PM <sub>10</sub> Concentration (µg/m <sup>3</sup> )	Median Daily PM <sub>10</sub> Concentration (µg/m <sup>3</sup> )	Days TARP Implemented in the Month
-	Representative Background - Alphington	27.0	15.9	-
1	Site Office	37.7	13.7	0
2	Daycare	15.7	12.4	

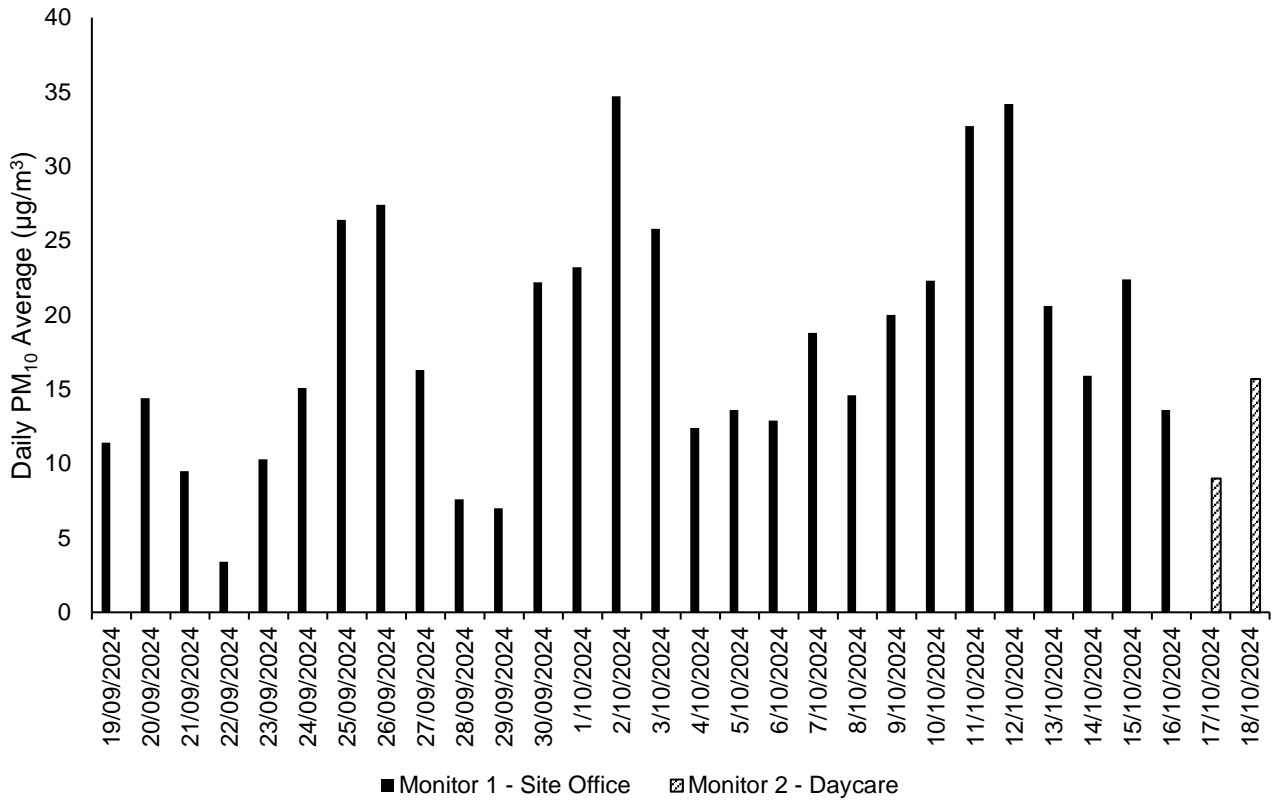


Figure 8: Monash PM<sub>10</sub> daily averages

### 3.4.1. Analysis

The maximum daily average PM<sub>10</sub> concentrations were 37.7 µg/m<sup>3</sup> (n = 28), and 15.7 µg/m<sup>3</sup> (n = 2) at the monitoring locations at Site Office (Monitor 1) and Daycare (Monitor 2), respectively. Works at Monash recommenced on 1 October 2024.

The TARP was not implemented during the reporting period as regular dust suppression activities were adequate. The water cart and handheld hoses were used proactively and reactively to suppress dust as required. Monitor 1 was moved to the Daycare monitoring location on 17 October 2024 prior to commencement of works in the area.



### 3.5. Clayton



Figure 9: Clayton air quality monitoring stations.

Table 8: Clayton PM<sub>10</sub> results.

Monitor Number	Monitoring Location	Max Daily PM <sub>10</sub> Concentration (µg/m <sup>3</sup> )	Median Daily PM <sub>10</sub> Concentration (µg/m <sup>3</sup> )	Days TARP Implemented in the Month
-	Representative Background - Alphington	27.0	15.9	-
1	C&S Delta Hospital	56.4	17.6	8
2	Remembrance Gardens	49	26.8	
3	Cycon	5.8	0.8	
4	Clayton Community Space Site 1	37.3	18.6	

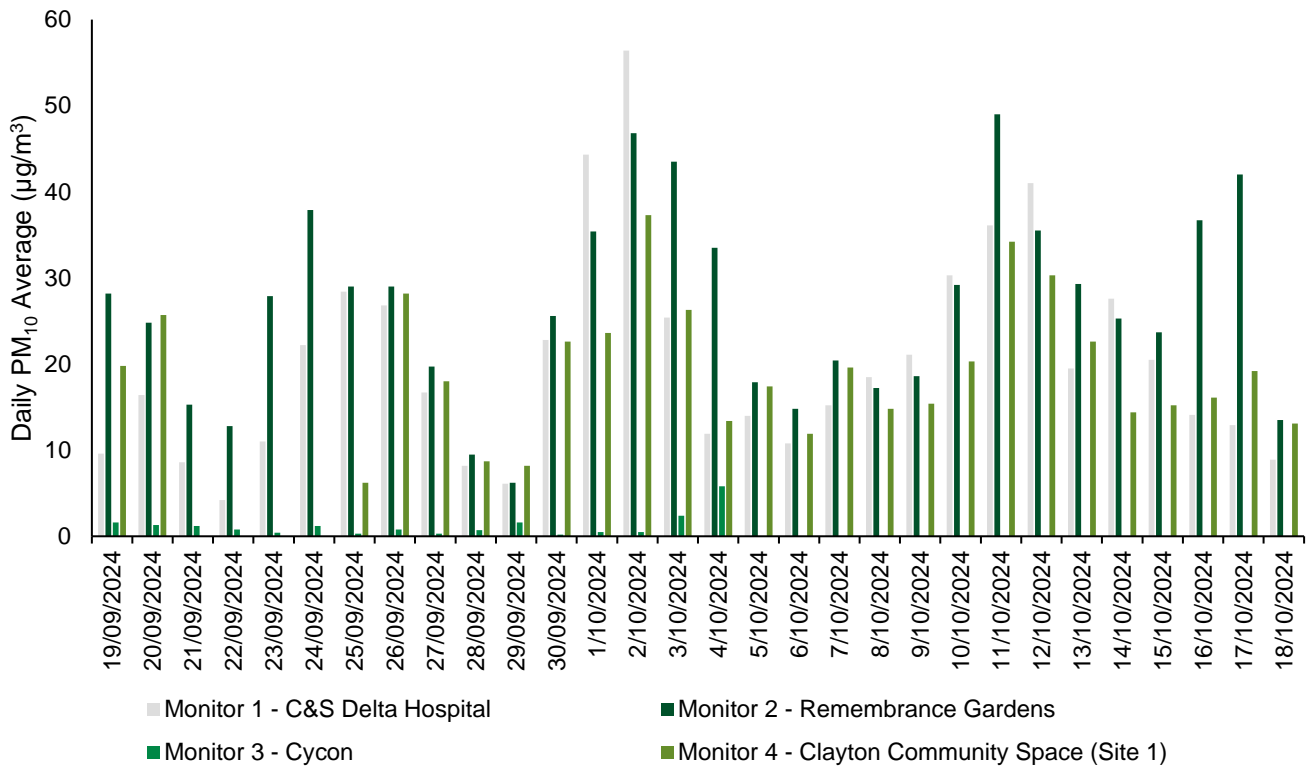


Figure 10: Clayton PM<sub>10</sub> daily averages

### 3.5.1. Analysis

The maximum daily average PM<sub>10</sub> concentration were 56.4 µg/m<sup>3</sup> (n = 30), 49.0 µg/m<sup>3</sup> (n = 30), 5.8 µg/m<sup>3</sup> (n = 16), and 37.3 µg/m<sup>3</sup> (n = 26), 110.0 µg/m<sup>3</sup> (n = 18) at the C&S Delta Hospital (Monitor 1), Remembrance Gardens (Monitor 2), Cycon (Monitor 3), and Clayton Community Space Site 1 (Monitor 4) monitoring locations respectively.

The TARP was implemented on eight days during the reporting period. Truck movements and spoil haulage activities contributed to dust generating activities on site. Monitor 1 reported the highest median concentrations due to stockpiling and movement of heavy machinery on site adjacent to the monitor. Proactive mitigation measures included using water carts and handheld hoses, requiring trucks to cover loads prior to leaving the site, and the street sweeper active around the site.

Monitor 3 was decommissioned on 5 October 2024 as works in the area were completed. Monitor 4 experienced battery charging issues from 21 September 2024 to 24 September 2024, rectified by device replacement on 25 September 2024.



### 3.6. Heatherton



Figure 11: Heatherton air quality monitoring stations.

Table 9: Heatherton PM<sub>10</sub> results.

Monitor Number	Monitoring Location	Max Daily PM <sub>10</sub> Concentration (µg/m <sup>3</sup> )	Median Daily PM <sub>10</sub> Concentration (µg/m <sup>3</sup> )	Days TARP Implemented in the Month
-	Representative Background - Dandenong	31.7	18.4	-
1	SSY - South	73.4	31.3	4
2	Site Office	5.9	0.5	
3	Henry St	77.7	18.7	

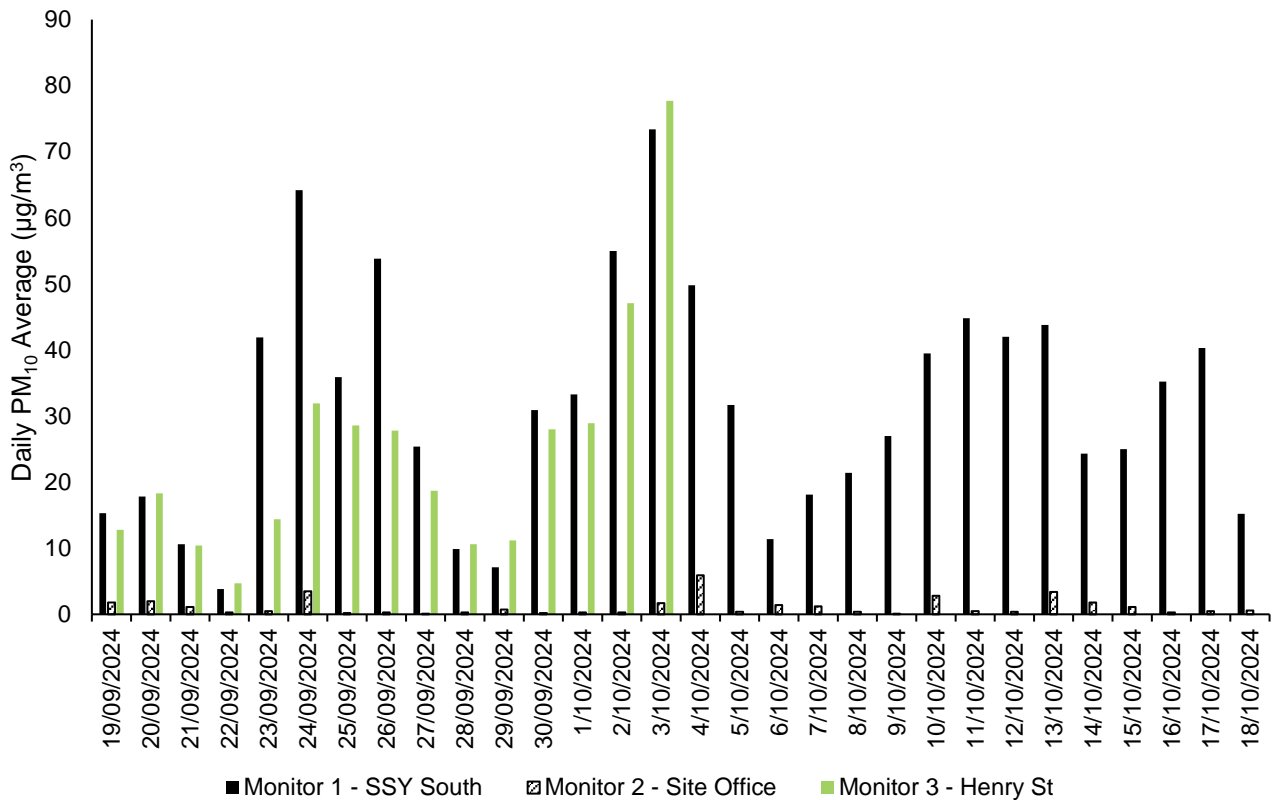


Figure 12: Heatherton PM<sub>10</sub> daily averages

### 3.6.1. Analysis

Both Initial Works and Early Works are being undertaken at Heatherton. Given the proximity of each of these works to each other, there is a strong possibility Initial Works are contributing to air quality conditions at the site. Initial Works are not subject to the EMF.

This report does not include monitoring related to asbestos removal, which is monitored and reported separately. Monitoring for asbestos particles in the air has consistently found levels are within a safe and allowable range.

Throughout this reporting period there were a range of works being undertaken at the site, some of which are not subject to the reporting requirements of this document. These included earthworks associated with site establishment and the safe removal of hazardous materials.

The maximum daily average PM<sub>10</sub> concentrations were 73.4 µg/m<sup>3</sup> (n = 30), 5.9 µg/m<sup>3</sup> (n = 30), and 77.7 µg/m<sup>3</sup> (n = 15) at SSY South (Monitor 1), Site Office (Monitor 2), and Henry St (Monitor 3) respectively. The TARP was implemented on four days during the reporting period.

The Heatherton site is in an industrial area with several neighbouring properties undertaking earthworks with large areas of exposed soil. On days where there are strong winds, airborne dust generated off-site has been observed to be blown onto the Heatherton site, contributing to elevated onsite monitoring results. As part of regular site inspections, high winds were reported by workers on days where the TARP was implemented on 24 September 2024, 26 September 2024, 2 October 2024 and 3 October 2024.

Where dust was generated, appropriate dust suppression controls were employed, such as handheld hoses and water carts.

### 3.7. Cheltenham

No works took place at Cheltenham during the reporting period, therefore no monitoring was required.

Air quality monitoring will recommence prior to works beginning in late-2024.

## 4. Meteorological Conditions

Table 10: Daily weather observations for Melbourne (Olympic Park), Victoria 19 September 2024 –18 October 2024. Data Source BOM.

Statistic	Min Temperature (°C)	Max Temperature (°C)	Maximum Wind Gust Direction	Maximum Wind Gust Speed (km/h)	Relative Humidity @ 9:00 AM (%)
Mean	11.0	19.7	-	-	63.4
Lowest	4.4	13.8	NNW	20.0	51.0
Highest	19.3	26.9	NNW	63.0	97.0

Table 11: Daily weather observations for Melbourne (Moorabbin), Victoria 19 September 2024 –18 October 2024. Data Source BOM.

Statistic	Min Temperature (°C)	Max Temperature (°C)	Maximum Wind Gust Direction	Maximum Wind Gust Speed (km/h)	Relative Humidity @ 9:00 AM (%)
Mean	9.7	19.6	-	-	66.1
Lowest	1.6	13.8	SW	26.0	53.0
Highest	17.4	26.9	N	74.0	93.0

Table 12: Daily rain data for Melbourne (Olympic Park and Moorabbin), Victoria 19 September 2024 –18 October 2024. Data Source BOM.

Statistic	Rain data Olympic Park (mm)	Rain data Moorabbin (mm)
Daily Low	0.0	0.0
Daily High	12.6	10.8
Total	42	42.6

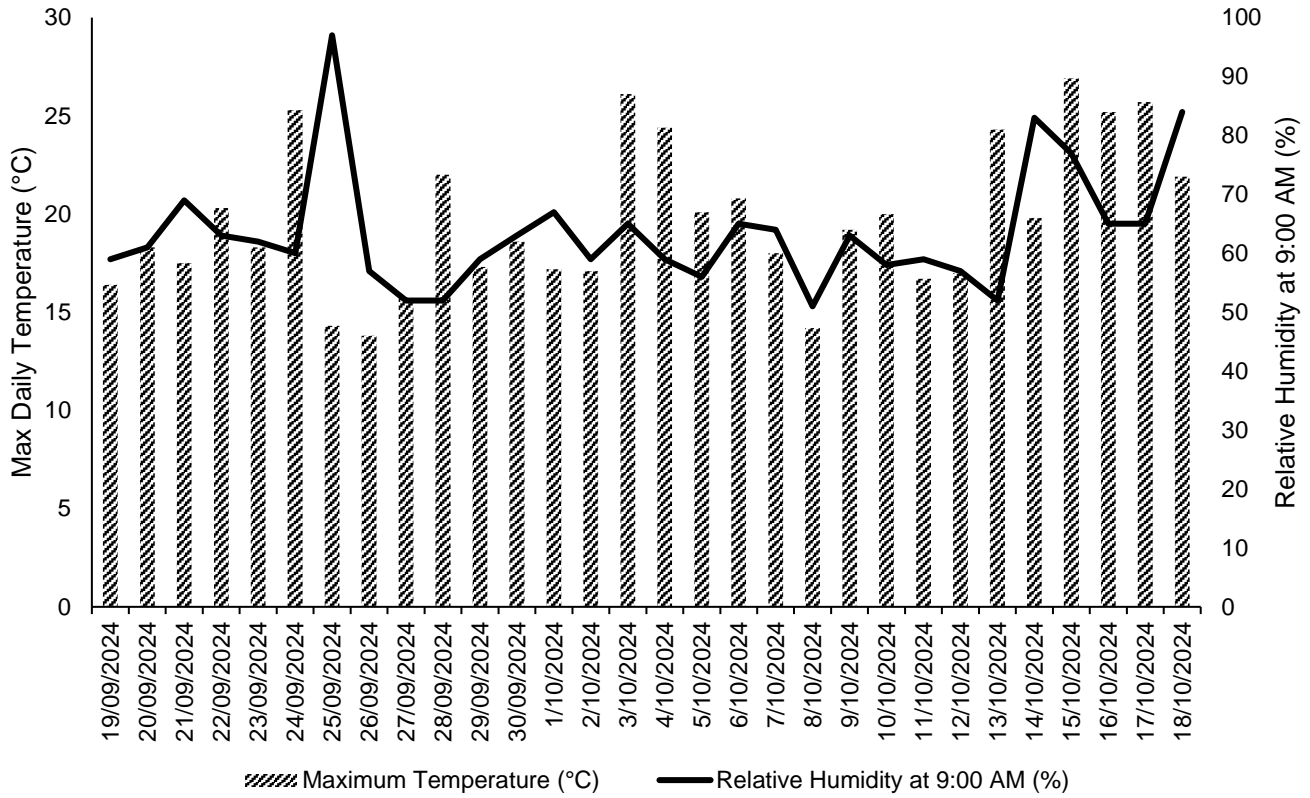


Figure 13: Daily relative humidity and temperature observations for Melbourne (Olympic Park), Victoria 19 September 2024 – 18 October 2024. Data Source BOM.

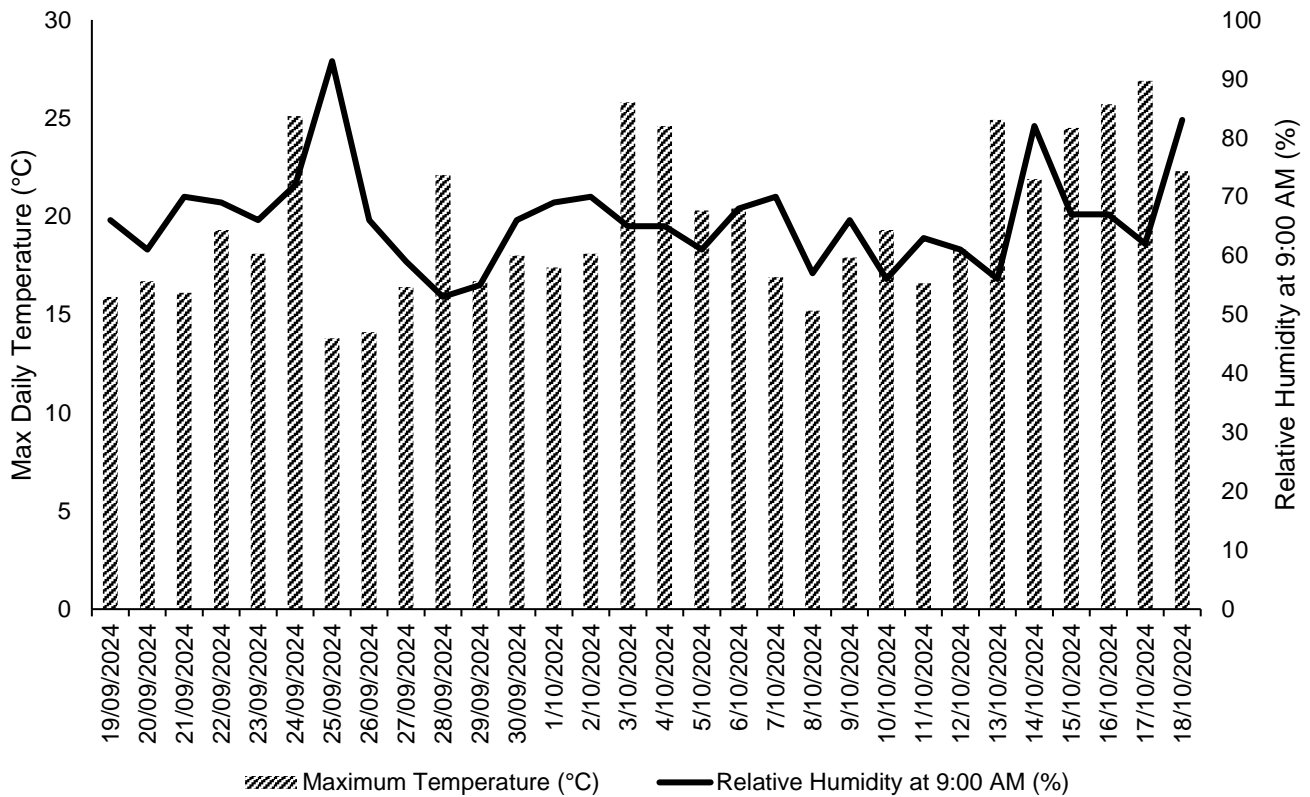


Figure 14: Daily relative humidity and temperature observations for Melbourne (Moorabbin), Victoria 19 September 2024 – 18 October 2024. Data Source BOM.

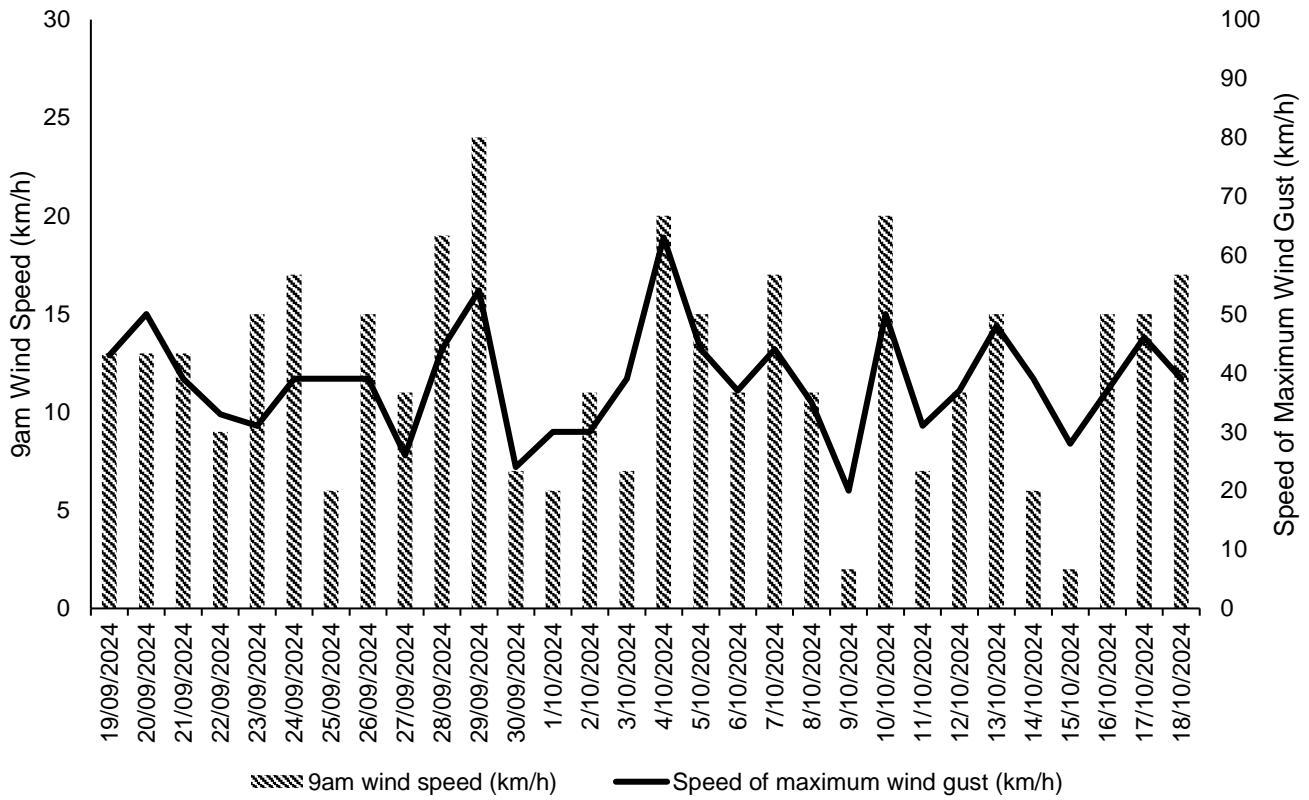


Figure 15: Daily wind speed observations for Melbourne (Olympic Park), Victoria 19 September 2024 –18 October 2024. Data Source BOM.

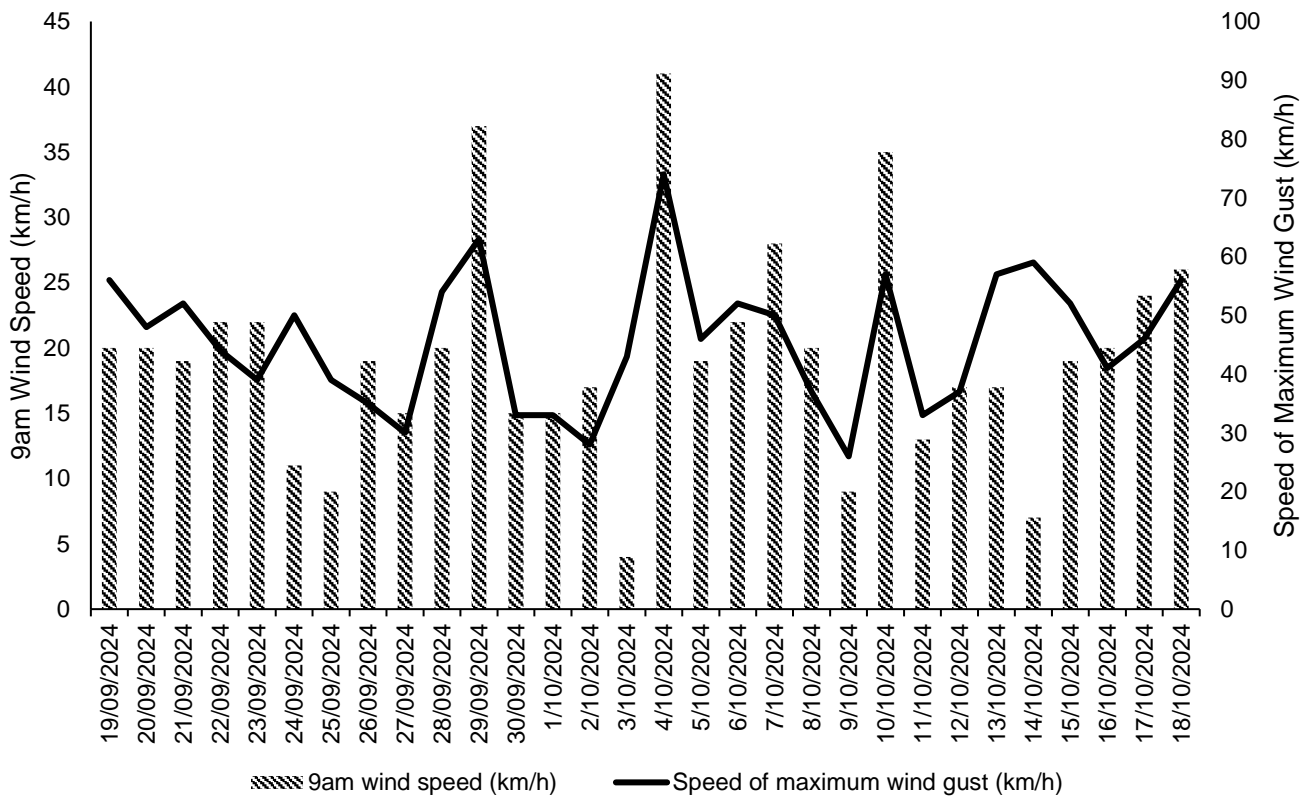


Figure 16: Daily wind speed observations for Melbourne (Moorabbin), Victoria 19 September 2024 –18 October 2024. Data Source BOM.

## 5. Quality Assurance

### 5.1. 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 period 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.

Data capture statistics for the reporting period 19 September 2024 to 18 October 2024 are shown in Table 13.

Data capture statistics were 100% for all parameters at all stations for the reporting period, except for the following:

- At Burwood, the gap in reporting data was caused by water in the battery connection causing it to disconnect. Monitor 6 was offline from 2 October 2024 to 7 October 2024. Monitor 6 was decommissioned on 12 October 2024 as works at Bennettswood were completed.
- At Clayton, the gaps within the reporting period were due to battery charging issues. Monitor 4 experienced battery charging issues from 21 September 2024 to 24 September 2024, rectified by device replacement on 25 September 2024. Monitor 3 was decommissioned on 5 October 2024 as works in the area were completed.
- At Heatherton, Monitor 3 has been offline since 4 October 2024 due to technical issues. This has been reported to the subcontractor, and a replacement device is in procurement.
- At Cheltenham, no monitoring was completed during the reporting period. No works occurred at the site.
- The construction program has been reviewed to ensure monitoring devices are installed prior to works. The MC is continuing to closely monitor the operation of the SiteHive units.

Table 13: Air quality monitoring, data capture summary

Location	Parameter	Averaging Period	Collected Periods	Available Periods	Data Capture
Box Hill – Site Office	PM <sub>10</sub>	24-hours	30	30	100%
Box Hill – East of Market Street	PM <sub>10</sub>	24-hours	30	30	100%
Box Hill – Uniting AgeWell	PM <sub>10</sub>	24-hours	30	30	100%
Box Hill – Irving Avenue	PM <sub>10</sub>	24-hours	30	30	100%
Burwood – Corner of McComas Grove and Sinnott Street	PM <sub>10</sub>	24-hours	30	30	100%
Burwood – 16 McComas Grove	PM <sub>10</sub>	24-hours	30	30	100%
Burwood – Site 4 - West	PM <sub>10</sub>	24-hours	30	30	100%
Burwood – Site 4 - East	PM <sub>10</sub>	24-hours	30	30	100%
Burwood – Site 1 - South	PM <sub>10</sub>	24-hours	30	30	100%
Burwood – Bennettswood Reserve	PM <sub>10</sub>	24-hours	18	24	75%
Glen Waverley – Myrtle/Montclair	PM <sub>10</sub>	24-hours	30	30	100%
Glen Waverley – Railway Parade	PM <sub>10</sub>	24-hours	30	30	100%
Monash – Site Office	PM <sub>10</sub>	24-hours	28	28	100%
Monash – Daycare	PM <sub>10</sub>	24-hours	2	2	100%
Clayton – C&S Delta Hospital	PM <sub>10</sub>	24-hours	30	30	100%
Clayton - Remembrance Gardens	PM <sub>10</sub>	24-hours	30	30	100%
Clayton – Cycon	PM <sub>10</sub>	24-hours	16	16	100%
Clayton – Clayton Community Space Site 1	PM <sub>10</sub>	24-hours	26	30	87%
Heatherton – SSY – South	PM <sub>10</sub>	24-hours	30	30	100%
Heatherton – SSY – Site Office	PM <sub>10</sub>	24-hours	30	30	100%



Location	Parameter	Averaging Period	Collected Periods	Available Periods	Data Capture
Heatherton – SSY – Henry St	PM <sub>10</sub>	24-hours	15	30	50%

## 5.2. Data Validation

Data contained in this report has been validated against performance and calibration requirements for each instrument.

Table 14: Monitoring device calibration information.

Location	Device Serial Number	Calibration Date	Calibration Due
Box Hill – Site Office	HEX-000407	29 Aug 2023	29 Aug 2025
Box Hill – East of Market Street	HEX-000339	19 Apr 2023	19 Apr 2025
Box Hill – Uniting AgeWell	HEX-000011	8 Apr 2024	8 Apr 2026
Box Hill – Irving Avenue	HEX-000222	13 June 2024	13 June 2026
Burwood – 16 McComas Grove	HEX-000385	29 Aug 2023	29 Aug 2025
Burwood – Corner of McComas Grove and Sinnott Street	HEX-000308	3 Apr 2023	3 Apr 2025
Burwood – Site 4 - West	HEX-000489	6 Dec 2023	06 Dec 2025
Burwood – Site 4 – East	HEX-000541	24 Apr 2024	24 Apr 2026
Burwood – Site 1 South	HEX-000532	13 May 2024	24 May 2026
Burwood – Bennettswood Reserve	HEX-000525	4 Mar 2024	4 Mar 2026
Glen Waverley – Myrtle/Montclair	HEX-000477	12 Dec 2023	12 Dec 2025
Glen Waverley – Railway Parade	HEX-000528	4 Mar 2024	4 Mar 2026
Monash – Site Office	HEX-000540	24 Apr 2024	24 Apr 2026
Monash – Daycare	HEX-000540	24 Apr 2024	24 Apr 2026
Clayton – C&S Delta Hospital	HEX-000462	29 Nov 2023	29 Nov 2025
Clayton – Remembrance Gardens	HEX-000632	14 Aug 2024	14 Aug 2026
Clayton - Cycon	HEX-000426	11 June 2024	11 June 2026
Clayton – Clayton Community Space Site 1	HEX-000031	5 March 2024	5 March 2026
Heatherton – SSY – South	HEX-000050	21 Apr 2023	21 Apr 2025
Heatherton – SSY – Site Office	HEX-000317	13 Dec 2023	13 Dec 2025
Heatherton – SSY – Henry St	HEX-000529	13 May 2024	13 May 2026