



**SUBURBAN
RAIL LOOP**

Air Quality Monthly Report

Early Works

Tunnels South

Tunnels North

19 September – 18 October 2025



**SUBURBAN
RAIL LOOP**
AUTHORITY



Introduction

This summary report presents the results of the monthly air quality monitoring data for the construction of SRL East. Laing O’Rourke (LOR) is delivering the Early Works (EW) as Managing Contractor (MC), Suburban Connect is delivering the Tunnels South works as Principal Contractor (PC) and Terra Verde is delivering the Tunnels North works as PC. The three delivery partners have individually prepared reports to comply with the Environmental Performance Requirement (EPR) for Air Quality.

SRL East Early Works include road modifications, relocation of underground services, ground improvement works, tram terminus works, and site preparations for tunnel boring machines.

SRL East Tunnels South is a fully tunnelled metro corridor between Cheltenham and Glen Waverley. The delivery scope encompasses station boxes and twin segmentally lined bored tunnels with cross passages.

SRLA East Tunnels North is a fully tunnelled metro corridor between Glen Waverley and Box Hill. The delivery scope encompasses an Emergency Support Facility Structure, station boxes, and twin segmentally lined bored tunnels with cross passages.

Appendices

Appendix 1 – Early Works

Appendix 2 – Tunnels South

Appendix 3 – Tunnels North

LAING O'ROURKE

Box Hill

Burwood

Glen Waverley

Monash

Clayton

Stabling facility

Cheltenham

Suburban Rail Loop East Early Works Air Quality Monthly Report

19 September 2025 – 18 October 2025

Document Information

Document Details	
Issue Date	5/11/2025
Revision Number	B
Status	Issued for Review

Revision Control

Revision Number	Change Detail	Date	Comment
A	Draft issued to SRLA	21/10/2025	Issued for Review
B	Draft issued to SRLA	5/11/2025	Issued for Review

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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_{10} – Particulate matter with an aerodynamic diameter of 10 micrometres (μm) or less. PM_{10} 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.

TARP Triggered During the Reporting Month – This refers to the number of days TARP trigger criteria or the Air Quality Objective was exceeded during the reporting month.

TARP Actions Implemented During the Reporting Month – This refers to the number of additional TARP mitigation measures or actions required to be implemented as a response to project related exceedances. These actions are in addition to existing controls implemented on site.

Executive Summary

Key Outcomes

Key outcomes arising from the monthly air quality monitoring program:

- In Box Hill all Early Works are complete, and all monitors have been decommissioned.
- In Burwood, the TARP was not implemented during the reporting period. This was because regular water cart and hose use was implemented on exposed soil. Regular site inspections were undertaken during this period to ensure these measures were regularly implemented.
- In Glen Waverley, the TARP was not implemented during the reporting period. Regular water cart and street sweeper use was implemented to ensure exposed soil was watered down and hardstand surfaces were clear of tracked sediment. Stockpiles were maintained less than 1m in height and stored behind hoarding which acted as a wind barrier. Truck loads were also covered as they left site to minimise wind carrying dust. Regular site inspections were maintained during this period to ensure these measures were effective and implemented.
- In Monash, all Early Works are complete, and all monitors have been decommissioned.
- In Clayton, all Early Works are complete, and all monitors have been decommissioned.
- In Heatherton, the TARP was not implemented during the reporting period. Water carts and hoses were used during excavation, and material and spoil haulage. Dust was reduced by application of soil binder on stockpiles, regular street sweeping, and covering truck loads prior to leaving the site. Regular site inspections were undertaken to confirm these control measures were in place.
- In Cheltenham, all Early Works are complete, and all monitors have been decommissioned.

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 2025 and 18 October 2025 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 PM₁₀, have the potential to impact human health. PM₁₀ refers to particles with an aerodynamic diameter of 10 µm or less.

Measured PM₁₀ 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 PM₁₀ 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 Triggered in the Month	Days TARP Implemented in the Month
Representative Background ¹						
Alphington	PM ₁₀	24-hour	32.1	15.4	-	-
Dandenong	PM ₁₀	24-hour	37.7	17.5	-	-
Burwood						
Site 1 – South	PM ₁₀	24-hour	41.5	16.0	0	0
Glen Waverley						
Site 1 North	PM ₁₀	24-hour	24.9	10.2	0	0
Heatherton						
SSY - South	PM ₁₀	24-hour	43.7	18.5	0	0
Site Office	PM ₁₀	24-hour	20.4	12.1		
SS17	PM ₁₀	24-hour	29.1	12.1		

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 8,000 direct local jobs, with trains 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.

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

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 PM₁₀ 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 PM₁₀ 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 PM₁₀ have the potential to impact human health. PM₁₀ 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 PM₁₀ which are measured over a 24-hour averaging period, as reproduced below in Table 2.

Table 2: Ambient air quality objectives for PM₁₀.

Indicator	Air Quality Objective (µg/m ³)	Averaging Period
Particles as PM ₁₀ (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
Burwood – Site 1 South	08 May 2024	Latitude: -37.8549° Longitude: 145.10995°	PM ₁₀	Alphington EPA monitoring station
Glen Waverley – Site 1 North	19 August 2024	Latitude: -37.880739° Longitude: 145.160738°	PM ₁₀	Alphington EPA monitoring station
Heatherton – SSY – South	29 May 2023	Latitude: -37.955917° Longitude: 145.10239°	PM ₁₀	Dandenong EPA monitoring station
Heatherton – SSY – Site Office	22 January 2024	Latitude: -37.95401° Longitude: 145.10062°	PM ₁₀	Dandenong EPA monitoring station
Heatherton – SSY – SS17	26 March 2025	Latitude: -37.9544° Longitude: 145.0975 °	PM ₁₀	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 PM₁₀ 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 PM₁₀ 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

No Early Works took place at Box Hill during the reporting period, therefore no monitoring was required.

3.2. Burwood



Figure 1: Burwood air quality monitoring stations.

Table 4: Burwood PM₁₀ results.

Monitor Number	Monitoring Location	Max Daily PM ₁₀ Concentration (µg/m ³)	Median Daily PM ₁₀ Concentration (µg/m ³)	Days TARP Triggered in the Month	Days TARP Implemented in the Month
-	Representative Background - Alphington	32.1	15.4	-	-
5	Site 1 – South	41.5	16.0	0	0

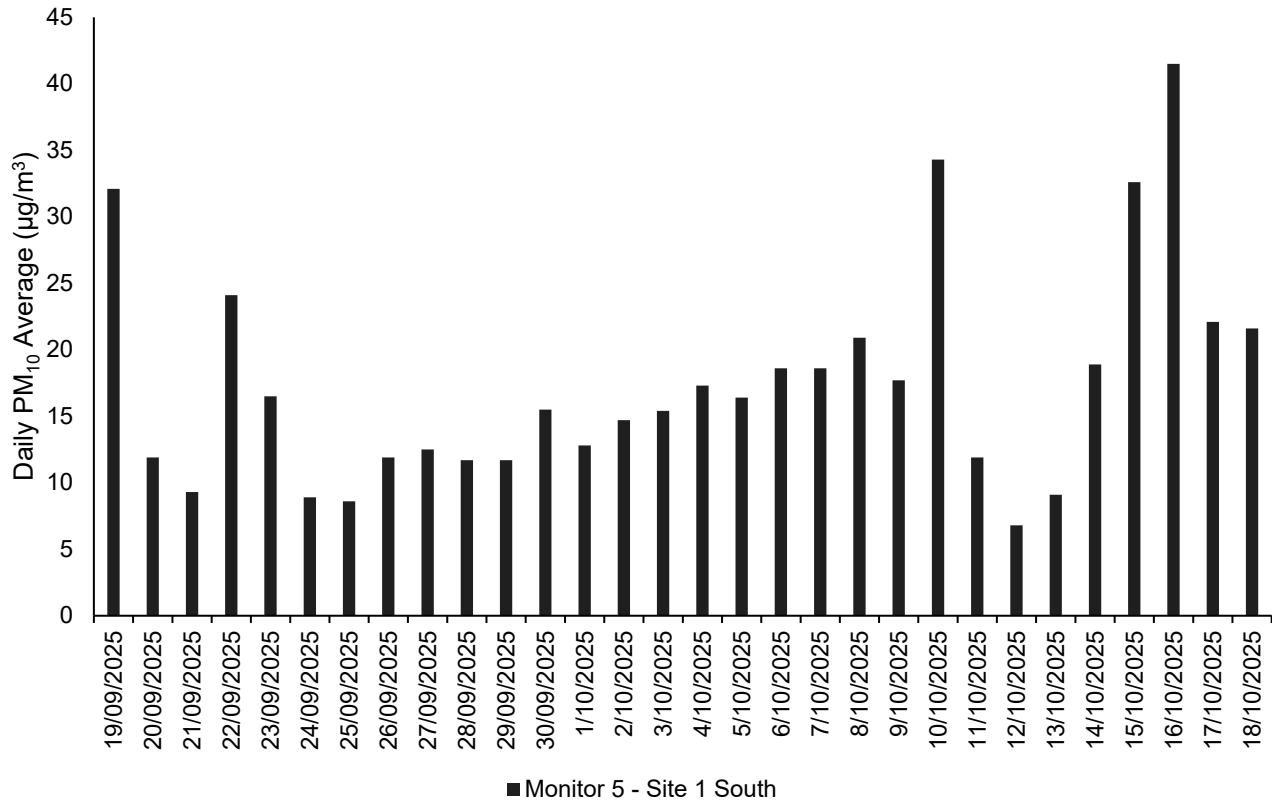


Figure 2: Burwood PM₁₀ daily averages.

3.2.1. Analysis

The maximum daily average PM₁₀ concentrations reported at the Burwood monitoring station was 41.5 µg/m³ (n = 30) at Site 1 South (Monitor 1).

The TARP was not implemented during the reporting period. Proactive measures were implemented during this period to manage dust on site, including regular water cart and hose use on exposed soil. Regular site inspections were undertaken during this period to ensure these measures were regularly implemented.

Monitor 1 through to Monitor 4 were demobilised from site on 18 September 2025 in preparation for site handover to Tunnels North.

3.3. Glen Waverley



Figure 3: Glen Waverley air quality monitoring stations.

Table 5: Glen Waverley PM₁₀ results.

Monitor Number	Monitoring Location	Max Daily PM ₁₀ Concentration (µg/m ³)	Median Daily PM ₁₀ Concentration (µg/m ³)	Days TARP Triggered in the Month	Days TARP Implemented in the Month
-	Representative Background - Alphington	32.1	15.4	-	-
1	Monitor 1 - Site 1 North	24.9	10.2	0	0

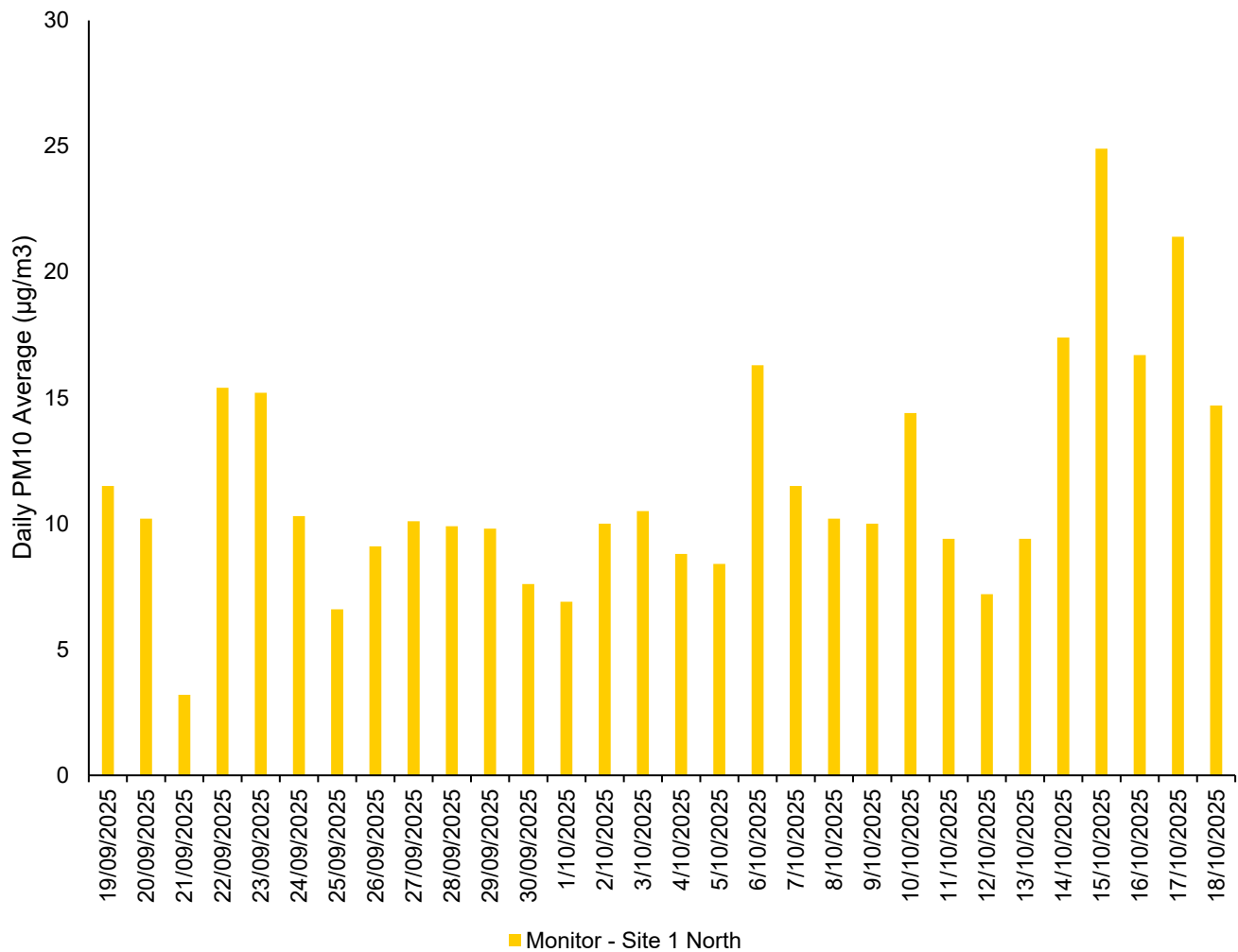


Figure 4: Glen Waverley PM₁₀ daily averages.

3.3.1. Analysis

The maximum daily average PM₁₀ concentration was 24.9 µg/m³ (n = 30) at Site 1 North Location.

The TARP was not implemented during the reporting period. Regular water cart and street sweeper use was implemented to ensure exposed soil was watered down and hardstand surfaces were clear of tracked sediment. Stockpiles were maintained less than 1m in height and stored behind hoarding which acted as a wind barrier. Truck loads were also covered as they left site to minimise wind carrying dust. Regular site inspections were maintained during this period to ensure these measures were effective and implemented.

3.4. Monash

No Early Works took place at Monash during the reporting period, therefore no monitoring was required.

3.5. Clayton

No Early Works took place at Clayton during the reporting period, therefore no monitoring was required.

3.6. Heatherton

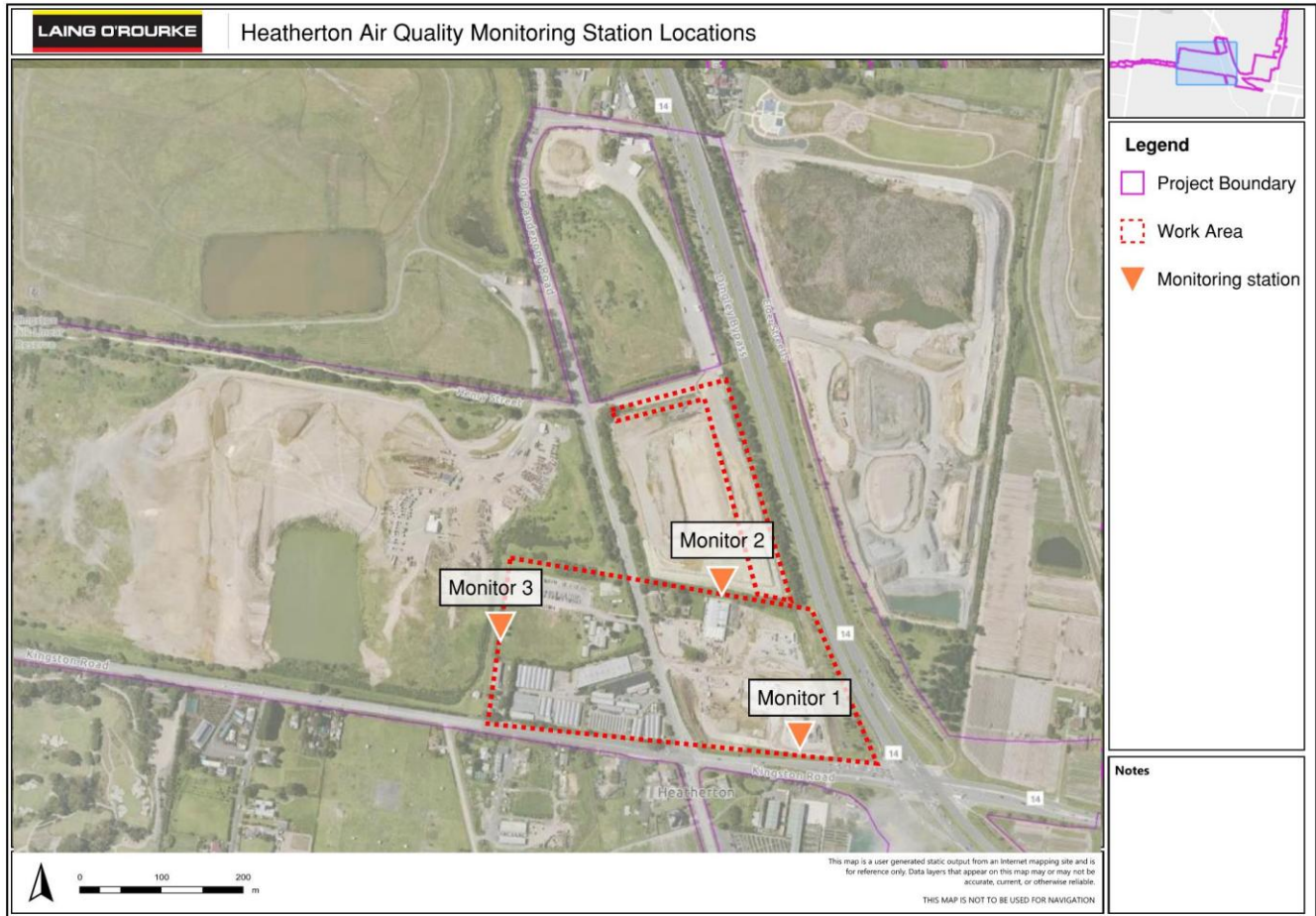


Figure 5: Heatherton air quality monitoring stations.

Table 6: Heatherton PM₁₀ results.

Monitor Number	Monitoring Location	Max Daily PM ₁₀ Concentration (µg/m ³)	Median Daily PM ₁₀ Concentration (µg/m ³)	Days TARP Triggered in the Month	Days TARP Implemented in the Month
-	Representative Background - Dandenong	37.7	17.5	-	-
1	SSY - South	43.7	18.5	0	0
2	Site Office	20.4	12.1	0	0
3	SS17	29.1	12.1	0	0

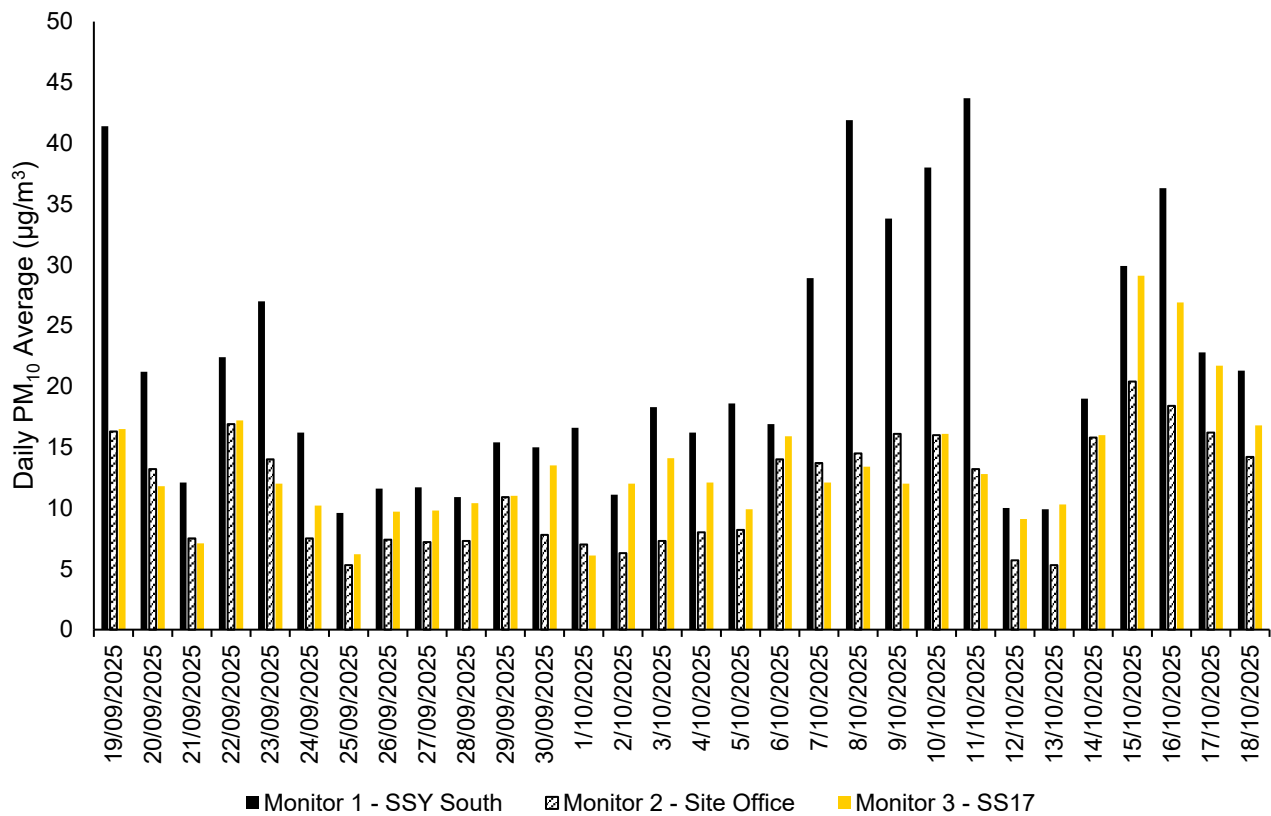


Figure 6: Heatherton PM₁₀ daily averages.

3.6.1. Analysis

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. Works being undertaken by Suburban Connect are not captured within this report, these included earthworks associated with the Western Portal Tunnel Access Structure (TAS) and the safe removal of hazardous materials.

The maximum daily average PM₁₀ concentrations were 43.7 µg/m³ (n = 30), 20.4 µg/m³ (n = 30), and 29.1 µg/m³ (n = 30) at SSS South (Monitor 1), Site Office (Monitor 2), and SS17 (Monitor 3) respectively. The TARP was not implemented during the reporting period. Proactive controls were implemented such as water cart operation, soil binders on disused stockpiles and covering truck loads.

3.7. Cheltenham

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

4. Meteorological Conditions

Table 7: Daily weather observations for Melbourne (Olympic Park), Victoria 19 September 2025 – 18 October 2025. 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	10.8	20.1	-	41.1	59.7
Lowest	6.4	13.9	SSW	22.0	36.0
Highest	15.2	30.1	S	76.0	79.0

Table 8: Daily weather observations for Melbourne (Moorabbin), Victoria 19 September 2025 – 18 October 2025. 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	10.0	19.8	-	50.3	62.0
Lowest	4.7	14.2	WNW	24.0	35.0
Highest	15.0	31.2	WNW	85.0	86.0

Table 9: Daily rain data for Melbourne (Olympic Park and Moorabbin), Victoria 19 September 2025 – 18 October 2025. Data Source BOM.

Statistic	Rain data Olympic Park (mm)	Rain data Moorabbin (mm)
Daily Low	0.0	0.0
Daily High	4.0	6.0
Total	19.0	25.2

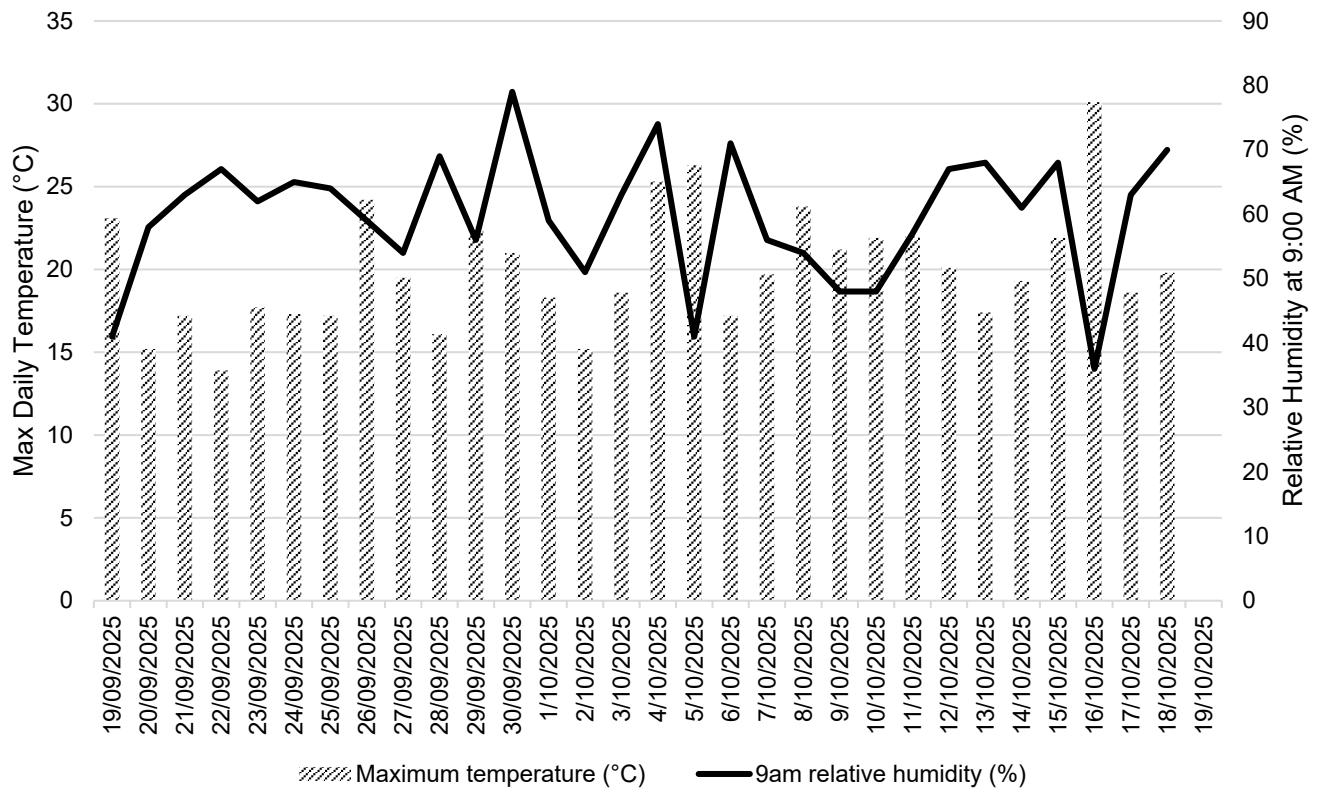


Figure 7: Daily relative humidity and temperature observations for Melbourne (Olympic Park), Victoria 19 September 2025 – 18 October 2025. Data Source BOM.

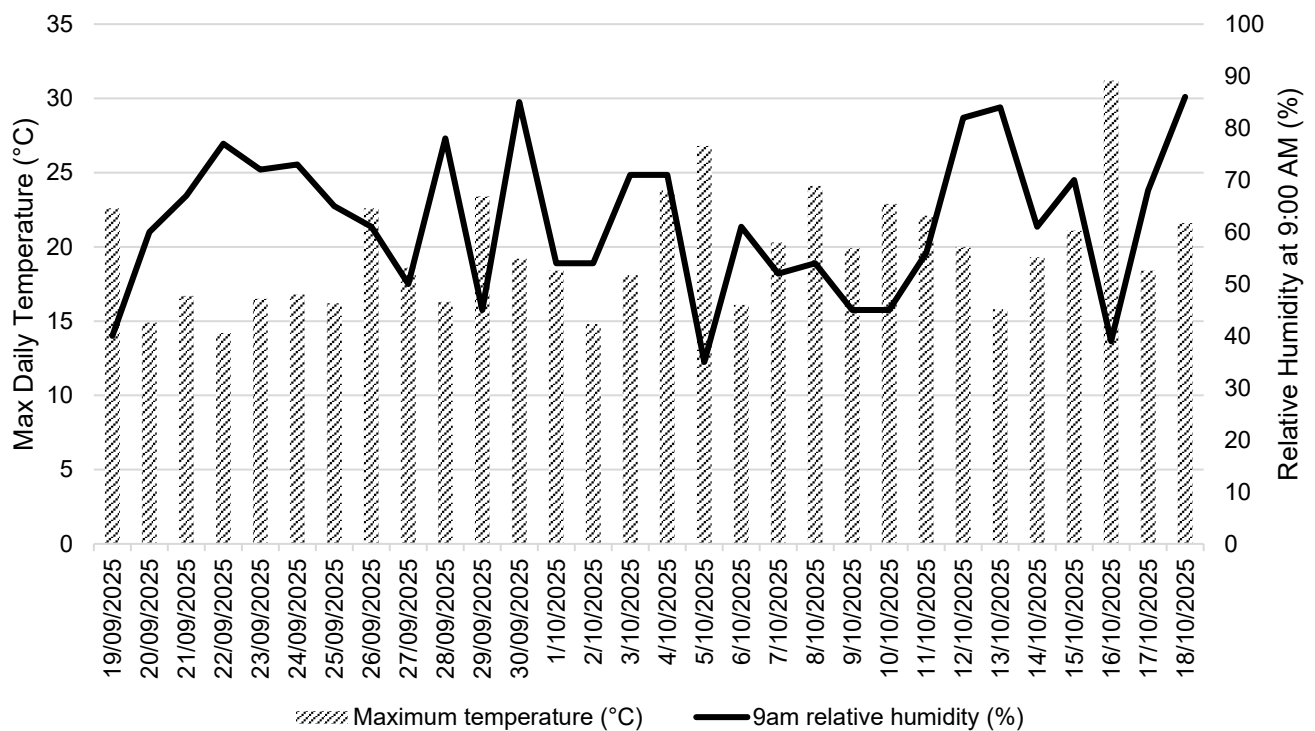


Figure 8: Daily relative humidity and temperature observations for Melbourne (Moorabbin), Victoria 19 September 2025 – 18 October 2025. Data Source BOM.

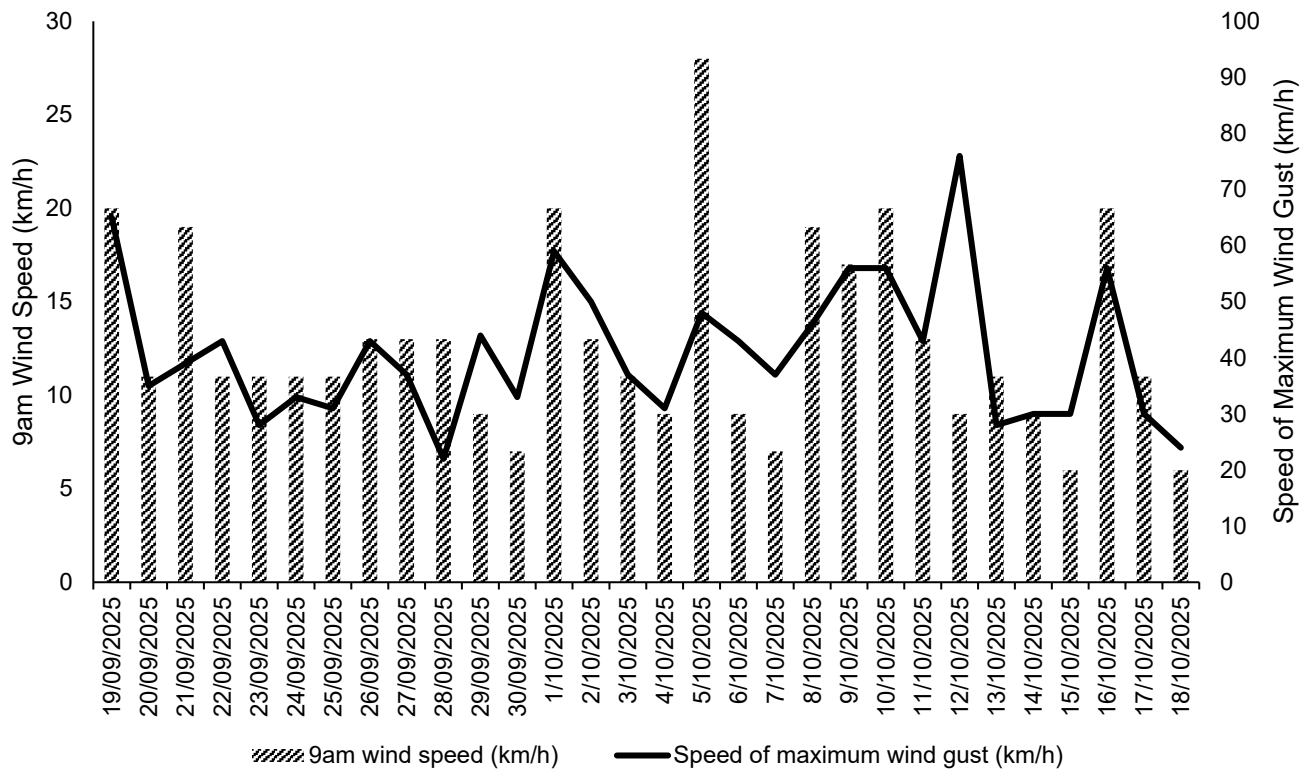


Figure 9: Daily wind speed observations for Melbourne (Olympic Park), Victoria 19 September 2025 – 18 October 2025. Data Source BOM.

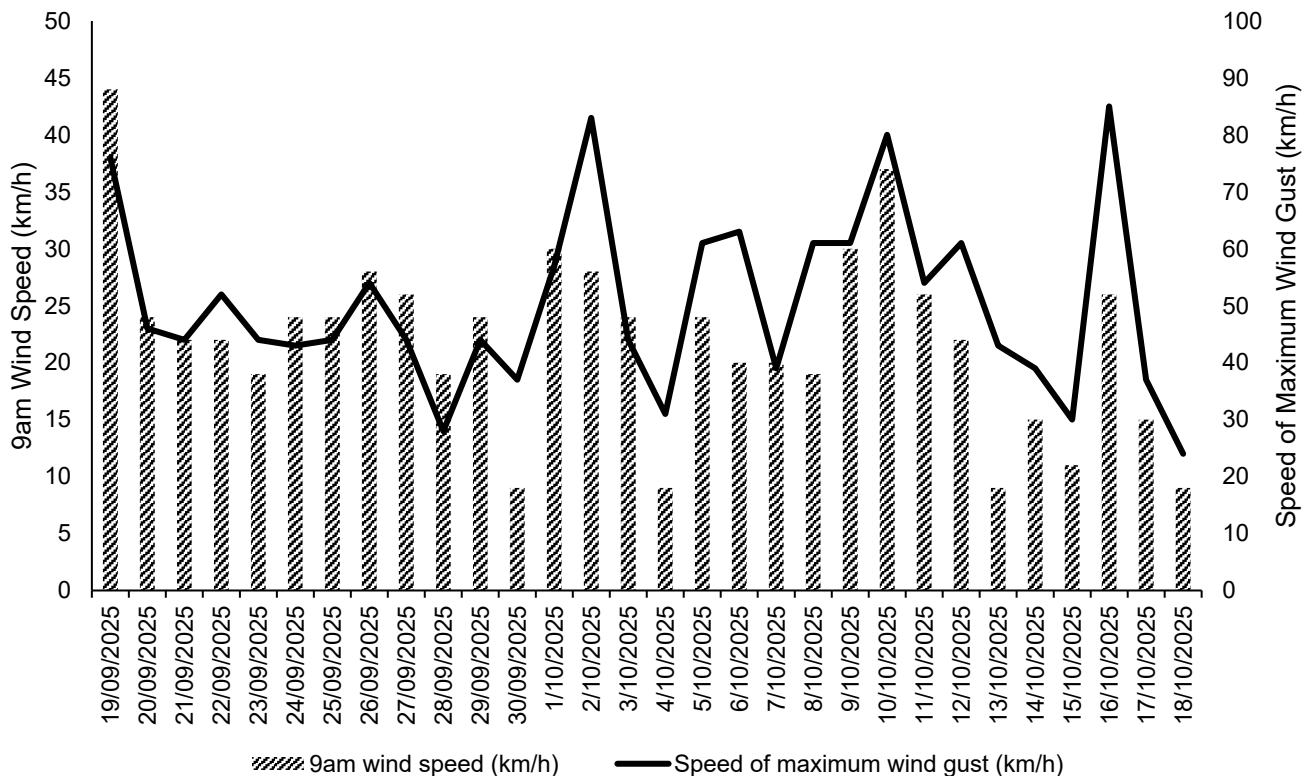


Figure 10: Daily wind speed observations for Melbourne (Moorabbin), Victoria 19 September 2025 – 18 October 2025. Data Source BOM.

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 2025 to 18 October 2025 are shown in Table 10.

Data capture statistics were 100% for all parameters at all stations for the reporting period.

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 10: Air quality monitoring, data capture summary

Location	Parameter	Averaging Period	Collected Periods	Available Periods	Data Capture
Burwood – Site 1 - South	PM ₁₀	24-hours	30	30	100%
Glen Waverley – Site 1 North	PM ₁₀	24-hours	30	30	100%
Heatherton – SSY – South	PM ₁₀	24-hours	30	30	100%
Heatherton – SSY – Site Office	PM ₁₀	24-hours	30	30	100%
Heatherton – SSY - SS17	PM ₁₀	24-hours	30	30	100%

5.2. Data Validation

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

Table 11: Monitoring device calibration information.

Location	Device Serial Number	Calibration Date	Calibration Due
Burwood – Site 1 South	HEX-000138	5 Mar 2025	5 Mar 2027
Glen Waverley – Site 1 North	HEX-000277	5 Feb 2025	5 Feb 2027
Heatherton – SSY – South	HEX-000317	13 Dec 2023	13 Dec 2025
Heatherton – SSY – Site Office	HEX-000317	13 Dec 2023	13 Dec 2025
Heatherton – SSY - SS17	HEX-000499	5 March 2025	5 March 2027

Suburban Rail Loop East Tunnels South Air Quality Monthly Report

19 September 2025 to 18 October 2025

Document Information

Document Details

Document Number	SRL-WPC-SCC-SPKW-REP-XEV-PWD-000014
Revision Date	31-Oct-2025
Revision Number	D

Revision Control

Revision Number	Change Detail	Date	Comment
A	Draft issued to SRLA	23/10/2025	Issued For Review
B	Draft issued to SRLA	27/10/2025	Issued For Review
C	Final report issued to SRLA	29/10/2025	Final Report
D	Final report issued to SRLA	31/10/2025	Final Report

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Executive Summary

Key Outcomes

Key outcomes arising from the monthly air quality monitoring program:

- Works requiring air quality monitoring took place at:
 - Train Stabling Facility West
 - Clarinda tunnel boring machine (TBM) launch site
 - Clayton
 - Monash
- Visual air inspections were undertaken proactively to monitor and confirm there were no dust impacts due to works on site.
- All instances of elevated monitoring results were investigated and confirmed existing mitigation measures were sufficient to manage dust risks onsite.

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 main works construction site for the period between 19 September 2025 to 18 October 2025 in accordance with SRL East Environmental Management Framework (EMF) and Environmental Performance Requirements (EPRs) AQ1 and AQ2.

Suburban Connect is implementing 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 PM₁₀ have the potential to impact human health. PM₁₀ refers to particles with an aerodynamic diameter of 10 µm or less.

This report compares the measured concentrations to air quality objectives that are defined in the Environment Reference Standard (ERS) which is a tool under the Environment Protection Act 2017. The ERS sets out the air quality objectives for PM₁₀ 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 Suburban Connect understand the risk to human health. When the instrumental monitor and/or visual observations identify a change in site conditions this prompts Suburban Connect to take actions on site to reduce dust impacts, and review mitigation measures applied.

Scope of Reporting

Construction works requiring air quality monitoring occurred at the following site/s during this reporting period:

- Train Stabling Facility West
- Clarinda TBM Launch Site
- Clayton
- Monash

There were no construction works requiring air quality monitoring at the following site/s during this reporting period:

- Cheltenham
- Train Stabling Facility East
- Glen Waverley

There were no construction works requiring air quality monitoring at Clarinda – CC01 during this reporting period, however any future activity on this site will be considered as part of the Clarinda TBM Launch Site.

This report does not include:

- Works delivered as SRL Initial Works. The SRL Initial Works, which include investigative works are not subject to the EMF and EPRs.
- Monitoring related to asbestos containing material removal works, 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

Location	Parameter	Averaging Period	Max Concentration (µg/m ³)	Median Concentration (µg/m ³)	Days TARP Triggered in the Month	Days TARP Actions Implemented in the Month
Representative Background Locations						
Dandenong	PM ₁₀	24-hour	37.7	18.0	-	-
Train Stabling Facility West						
Linear Reserve North	PM ₁₀	24-hour	39.1	18.5	4	0
Linear Reserve South	PM ₁₀	24-hour	29.1	13.2	0	0
North	PM ₁₀	24-hour	36.2	14.0	2	0
South	PM ₁₀	24-hour	30.1	12.3	0	0
Clarinda TBM launch site						
East	PM ₁₀	24-hour	109.2	46.3	18	0
North West	PM ₁₀	24-hour	51.0	26.8	3	0
South Boundary	PM ₁₀	24-Hour	70.0	32.8	9	0
Clayton						
Central	PM ₁₀	24-hour	28.0	8.9	0	0
East (Church)	PM ₁₀	24-hour	30.5	16.2	0	0
South	PM ₁₀	24-hour	39.7	19.2	0	0
North West	PM ₁₀	24-hour	35.0	12.0	0	0
Monash						
54 Howleys East Boundary	PM ₁₀	24-hour	31.5	14.8	0	0

Location	Parameter	Averaging Period	Max Concentration (µg/m ³)	Median Concentration (µg/m ³)	Days TARP Triggered in the Month	Days TARP Actions Implemented in the Month
Compound	PM ₁₀	24-hour	27.7	13.6	0	0
SW Demo Boundary	PM ₁₀	24-hour	28.1	14.2	0	0

1 Introduction

1.1 SRL East

Suburban Rail Loop (SRL) will deliver a 90km rail line linking every major train service from the Frankston Line to the Werribee Line via Melbourne Airport and transform our public transport network.

SRL East from Cheltenham to Box Hill is now in major construction. The new rail line will connect major employment, health, education and retail destinations in Melbourne's east and south east, slashing travel times, reducing congestion and connecting passengers travelling on the Gippsland corridor to destinations across Melbourne.

The SRL East – Tunnels South scope of works include:

- Initial launch of four TBMs from the Clarinda TBM launch site
- Construction of approximately 16km of twin tunnels between Cheltenham and Glen Waverley
- Construction of 55 cross passages between the tunnels (surface-based ground improvement at eight locations with the remainder to be frozen from within the main tunnels)
- Construction of the western and eastern decline structures at the train stabling facility
- Protection of the South Eastern Trunk Sewer (SETS)
- Box excavations at Clayton and Monash station locations
- Interface works with the Melbourne Metro Rail Network.

This report does not include works delivered as SRL Initial Works. The SRL Initial Works, which includes investigative works, 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.

1.2 Environmental Management Framework

The EMF for SRL East 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 of the Project. The EMF is available on 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 Environment Effects Statement (EES) and the Minister's Assessment, dated 5 August 2022.

The EMF requires the Principal Contractor (PC) to develop and implement an Environmental Air Quality and Dust Management Plan (EAQDMP). As part of implementing this document plan, the PC is required to conduct monitoring of PM₁₀ concentrations and measure wind speed and direction at each Early Works construction site and at a representative control site. The EAQDMP also includes a Trigger Action Response Protocol (TARP) which defines a set of triggers that prompt actions on site to reduce dust impacts, and review mitigation measures applied.

The PC regularly reviews the monitoring data at each site, for the purpose of assessing the effectiveness of EAQDMP implementation. The verified results of the PM₁₀ 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. Environment Protection Authority (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 Suburban Connect 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 PC 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 PC 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 PM₁₀ have the potential to impact human health. PM₁₀ 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 Environment Reference Standard (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 PC to understand the risk to human health. The ERS sets out the air quality objectives for PM₁₀ which are measured over a 24-hour averaging period, as reproduced below in Table 2.

Table 2: Ambient air quality objectives for PM₁₀

Indicator	Air Quality Objective (µg/m ³)	Averaging Period
Indicator Particles as PM ₁₀ (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 and compared against the air quality objective. 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 construction sites, to represent local air quality conditions and measure the potential impact of works on local sensitive receivers including residents.

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

Latitude and longitude coordinates of monitoring equipment are sourced directly from the monitoring equipment management system and locations may differ between reporting periods due to variance in GPS readings.

Table 3: Suburban Connect air quality monitoring locations for active works during reporting period

Monitoring Location	Date Commissioned	Coordinates	Monitoring Parameters	Representative Control Site
Train Stabling Facility West				
North	7 May 2025	Latitude: -37.9517° Longitude: 145.0942°	PM ₁₀	Dandenong EPA monitoring station
South	8 May 2025	Latitude: -37.9549° Longitude: 145.0935°	PM ₁₀	Dandenong EPA monitoring station
Linear Reserve North	15 May 2025	Latitude: -37.9528° Longitude: 145.0885°	PM ₁₀	Dandenong EPA monitoring station
Linear Reserve South	15 May 2025	Latitude: -37.9543° Longitude: 145.0882°	PM ₁₀	Dandenong EPA monitoring station
Clarinda TBM Launch Site				
South Boundary	21 Feb 2025	Latitude: -37.9570° Longitude: 145.1093°	PM ₁₀	Dandenong EPA monitoring station
East Boundary	3 Dec 2024	Latitude: -37.9570° Longitude: 145.1108°	PM ₁₀	Dandenong EPA monitoring station
North West Boundary	23 Jan 2025	Latitude: -37.9549° Longitude: 145.1075°	PM ₁₀	Dandenong EPA monitoring station
Clayton				
Central	21 May 2025	Latitude: -37.9213° Longitude: 145.1199°	PM ₁₀	Dandenong EPA monitoring station
North West	3 Dec 2024	Latitude: -37.9215° Longitude: 145.1193°	PM ₁₀	Dandenong EPA monitoring station
South	5 Mar 2025	Latitude: -37.9238° Longitude: 145.1193°	PM ₁₀	Dandenong EPA monitoring station

Monitoring Location	Date Commissioned	Coordinates	Monitoring Parameters	Representative Control Site
East (Church)	4 Jun 2025	Latitude: -37.9223° Longitude: 145.1205°	PM ₁₀	Dandenong EPA monitoring station
Monash				
Compound	2 Jul 2025	Latitude: -37.9031° Longitude: 145.1383°	PM ₁₀	Dandenong EPA monitoring station
SW Demo Boundary	6 Aug 2025	Latitude: -37.9048° Longitude: 145.1377°	PM ₁₀	Dandenong EPA monitoring station
SE Furnace Demo Boundary	2 Jul 2025	Latitude: -37.9050° Longitude: 145.1390°	PM ₁₀	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.
- 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.
- Proximity of site monitors to public roads, industrial businesses and other factors will impact data recording.
- Monitors may need to be located close to works due to security requirements.
- Monitor locations will change as works progress and construction activity locations change.

Data has been provided in tabular and graphical form in Section 3 to visually present 24-hour averages of PM₁₀ over the monthly period. The data included in this report has been verified by the Suburban Connect and relevant subject matter experts.

3 Results

Data has been presented in graphical form below to visually present 24-hour averages of PM₁₀ dust concentration over the monthly period for each active construction site.

The indicative air monitoring levels measured by sensors show the levels are generally in the range of 10 µg/m³ and 40 µg/m³, with the exception of the Clarinda TBM Launch Site which includes indicative air monitoring levels higher than 50 µg/m³. The sensor data has been adjusted to closer align with EPA's air quality monitoring station data at Dandenong.

EPA's Dandenong air quality monitoring station is categorised to be generally representative of the area and measured levels ranging from approximately 10 µg/m³ and 40 µg/m³.

The average levels of PM₁₀ measured over a 24-hour period is compared to the Environment Reference Standard of 50 µg/m³ to understand air quality impacts.

3.1 Train Stabling Facility West



Figure 1: Train Stabling Facility West site air quality monitoring stations

Table 4: Train Stabling Facility West Site PM₁₀ Results

Location	Parameter	Averaging Period	Max Concentration ($\mu\text{g}/\text{m}^3$)	Median Concentration ($\mu\text{g}/\text{m}^3$)	Days TARP Triggered in the Month	Days TARP Actions Implemented in the Month
Representative Background Locations						
Dandenong	PM ₁₀	24-hour	37.7	18.0	-	-
Train Stabling Facility West						
Linear Reserve North	PM ₁₀	24-hour	39.1	18.5	4	0
Linear Reserve South	PM ₁₀	24-hour	29.1	13.2	0	0
North	PM ₁₀	24-hour	36.2	14.0	2	0
South	PM ₁₀	24-hour	30.1	12.3	0	0

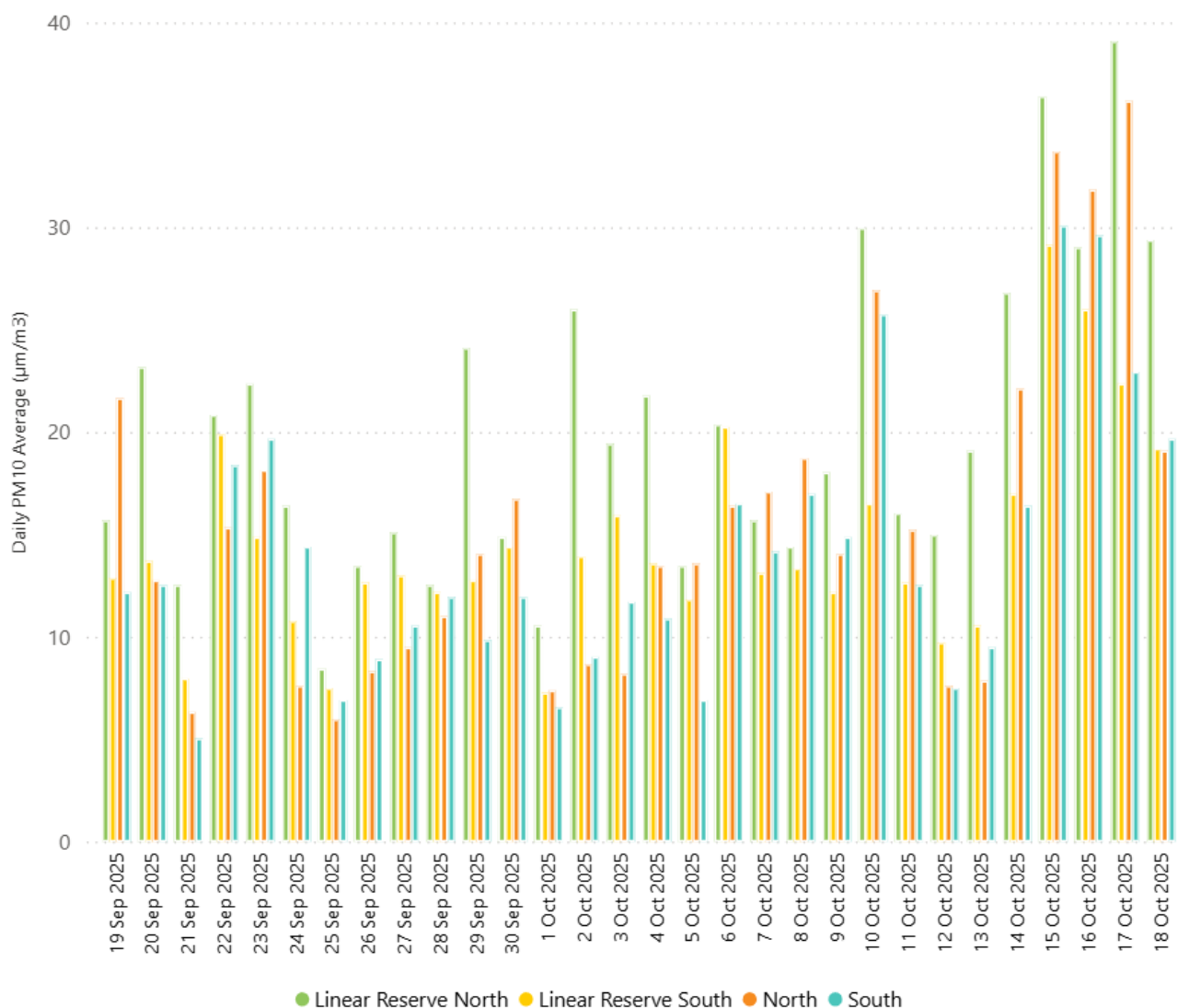


Figure 2: Daily Averages PM₁₀ Results at Train Stabling Facility West

3.1.1 Analysis

Measures implemented to proactively manage dust on this site include water carts, wheel wash and street sweepers. In addition, daily observations by supervisors and environmental representatives are performed to respond to areas of concern. Visual air inspections are also undertaken to proactively monitor and confirm there are no off-site dust impacts due to construction activities on site.

There were no elevated daily average PM₁₀ events during the reporting period. The TARP was triggered at the Linear Reserve North monitor (four days) and North monitor (two days) during the reporting period. On each occasion, site inspections observed no elevated dust levels due to site construction activities and no further TARP actions were implemented.

3.2 Clarinda TBM launch site



Figure 3: Clarinda TBM launch site air quality monitoring stations

Table 5: Clarinda TBM launch site PM₁₀ Results

Location	Parameter	Averaging Period	Max Concentration (µg/m ³)	Median Concentration (µg/m ³)	Days TARP Triggered in the Month	Days TARP Actions Implemented in the Month
Representative Background Locations						
Dandenong	PM ₁₀	24-hour	37.7	18.0	-	-
Clarinda TBM launch site						
East	PM ₁₀	24-hour	109.2	46.3	18	0
North West	PM ₁₀	24-hour	51.0	26.8	3	0
South Boundary	PM ₁₀	24-Hour	70.0	32.8	9	0

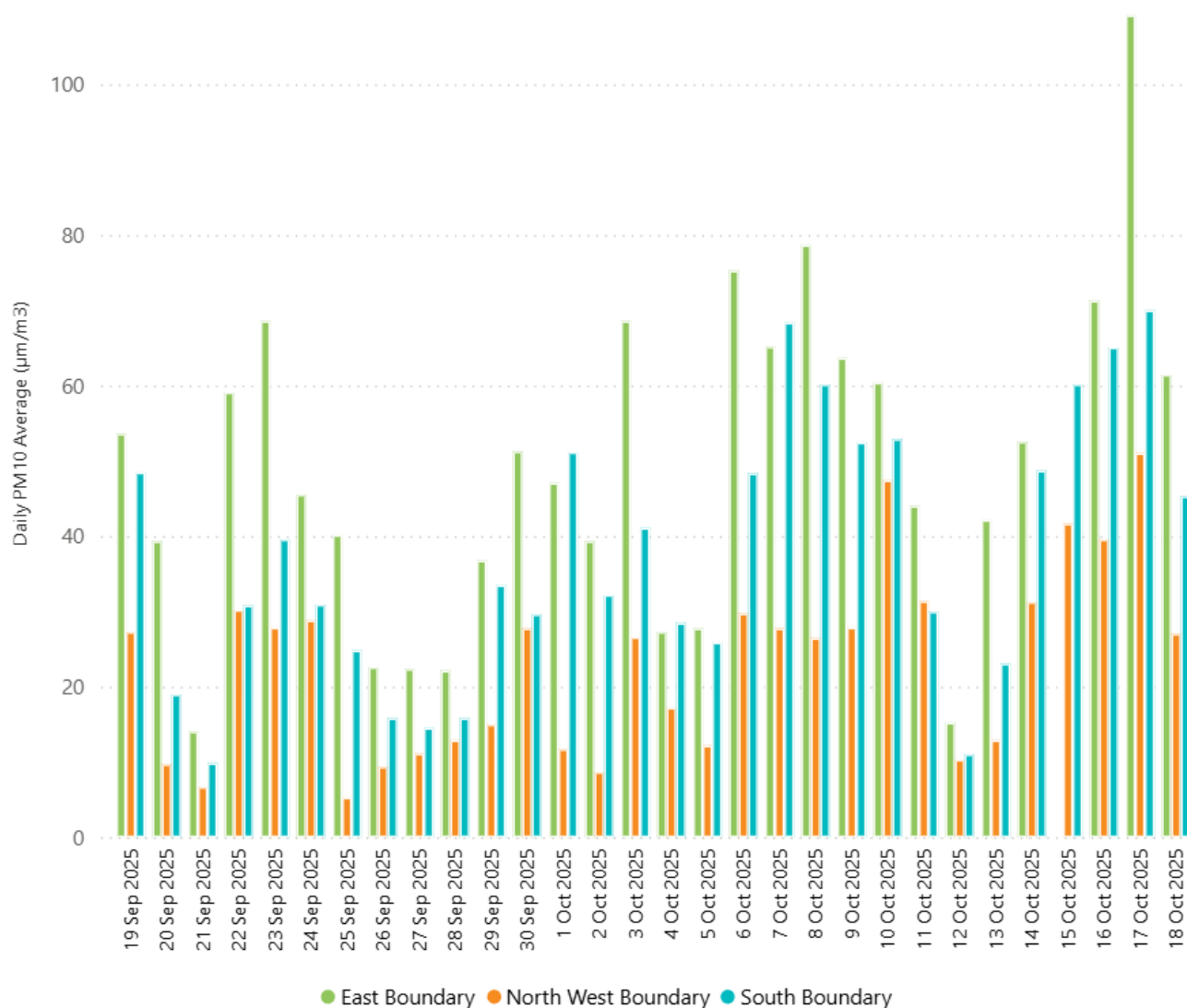


Figure 4: Daily Averages PM₁₀ Results at Clarinda TBM Launch Site

3.2.1 Analysis

Measures implemented to proactively manage dust on this site include a boundary sprinkler system, water carts, rumble grids, and street sweepers. In addition, daily observations by supervisors and environmental representatives are performed to respond to areas of concern. Visual air inspections are also undertaken to proactively monitor and confirm there were no off-site dust impacts due to construction activities on site.

The TARP was triggered at the South Boundary monitor (nine days), the North West Boundary monitor (three days) and the East Boundary monitor (eighteen days) during the reporting period. Investigations determined the elevated levels were due to an external source, site inspections observed no elevated dust levels due to site construction activities and no further TARP actions were implemented. Dust management measures were confirmed to be active and sufficient for the activities on site.

On the 17th October the East Boundary monitor recorded the highest elevated value. On this day, a site inspection observed active dust suppression implemented and no dust generation from construction activity, elevated readings were attributed to external sources. Controls were observed to be active and effective included:

- Water cart effectively suppressing potential for dust generation in work areas and haul roads
- Rumble grids and Foreign Object Debris System (FODS) well maintained and in good condition
- Street sweeper proactively managing asphalted roads.
- Fence line misters active for duration of shift

Data recording at the East Boundary monitor was temporarily interrupted on 15th October due to a technical issue. This was promptly identified and resolved, with data recording resuming the following day.

3.3 Clayton

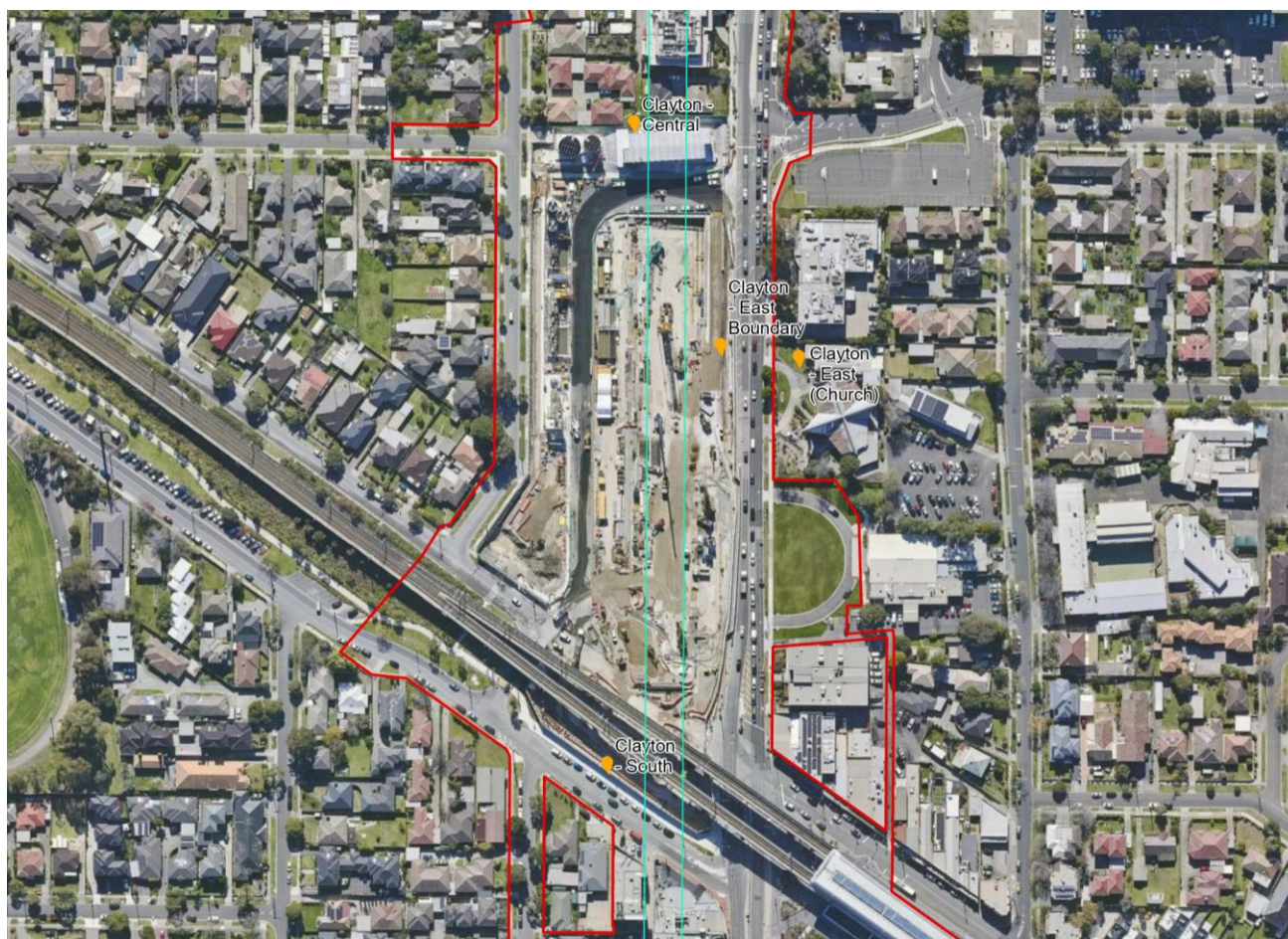


Figure 5: Clayton air quality monitoring stations

Table 6: Clayton PM₁₀ Results

Location	Parameter	Averaging Period	Max Concentration (µg/m ³)	Median Concentration (µg/m ³)	Days TARP Triggered in the Month	Days TARP Actions Implemented in the Month
Representative Background Locations						
Dandenong	PM ₁₀	24-hour	37.7	18.0	-	-
Clayton						

Location	Parameter	Averaging Period	Max Concentration (µg/m³)	Median Concentration (µg/m³)	Days TARP Triggered in the Month	Days TARP Actions Implemented in the Month
Central	PM ₁₀	24-hour	28.0	8.9	0	0
East (Church)	PM ₁₀	24-hour	30.5	16.2	0	0
South	PM ₁₀	24-hour	39.7	19.2	0	0
North West	PM ₁₀	24-hour	35.0	12.0	0	0

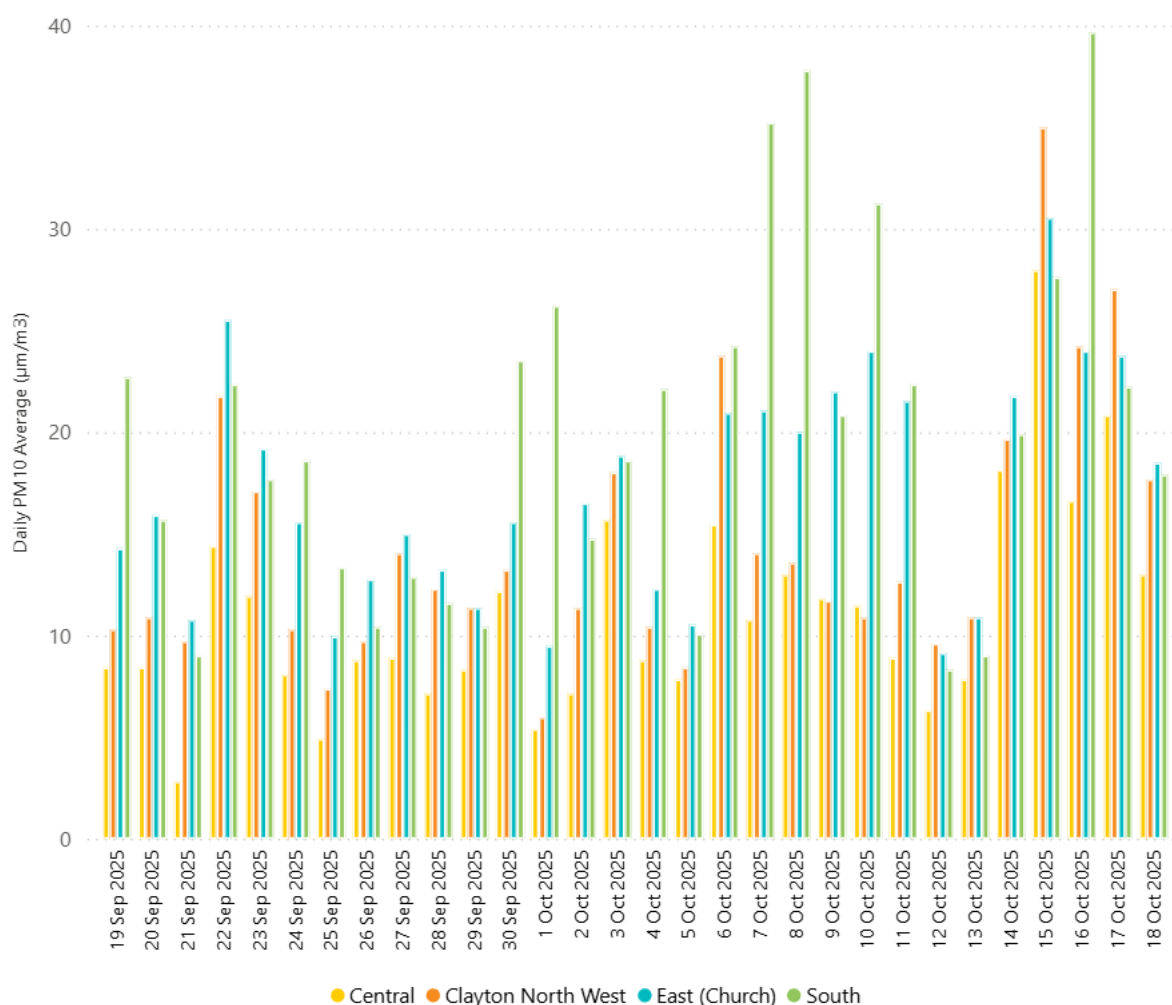


Figure 6: Daily Average PM₁₀ Results at Clayton

3.3.1 Analysis

Measures implemented to proactively manage dust on this site include water carts and street sweepers. Sealed surfaces have also contributed to reducing dust on site. In addition, daily observations by supervisors and environmental representatives are performed to respond to areas of concern. Visual air inspections are also undertaken to proactively monitor and confirm there are no off-site dust impacts due to construction activities on site.

There were no elevated PM₁₀ events during the reporting period.

3.4 Monash

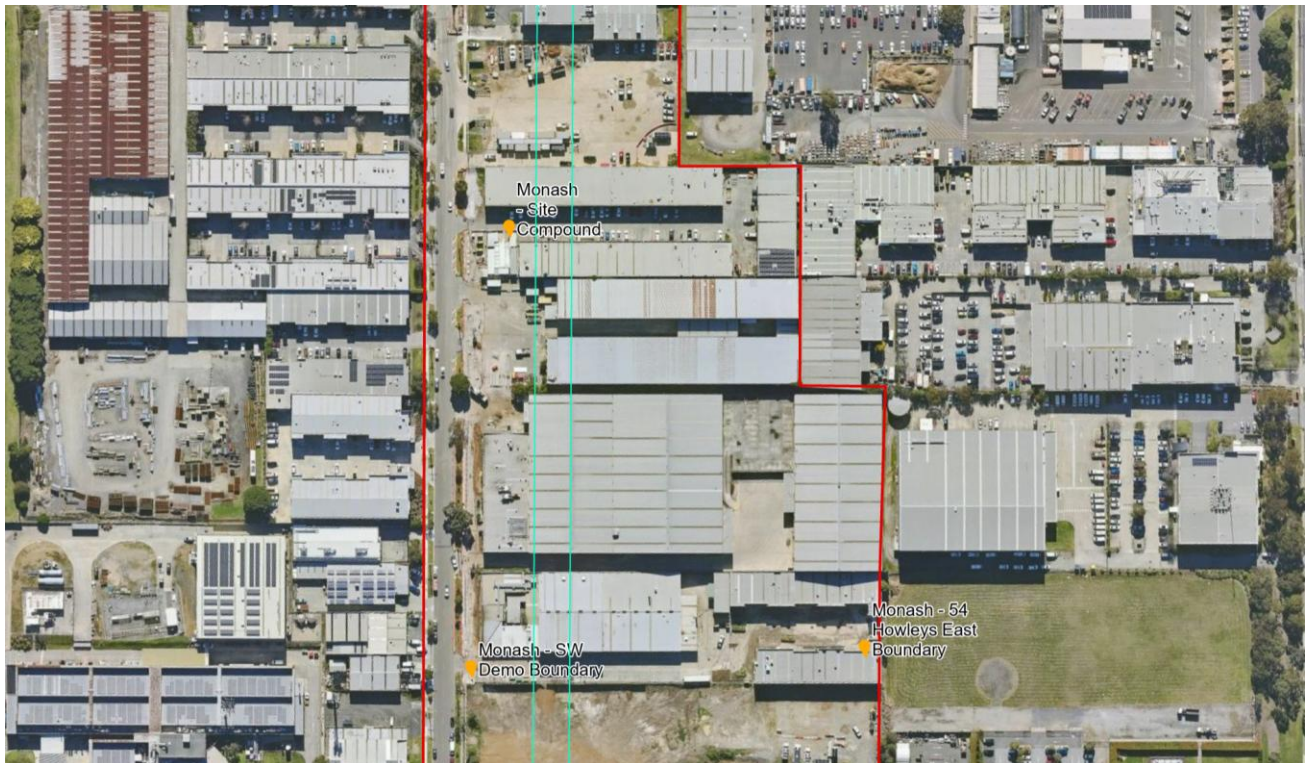


Figure 7: Monash air quality monitoring stations

Table 7: Monash PM₁₀ Results

Location	Parameter	Averaging Period	Max Concentration (µg/m ³)	Median Concentration (µg/m ³)	Days TARP Triggered in the Month	Days TARP Actions Implemented in the Month
Representative Background Locations						
Dandenong	PM ₁₀	24-hour	37.7	18.0	-	-
Monash						
54 Howleys East Boundary	PM ₁₀	24-hour	31.5	14.8	0	0
Compound	PM ₁₀	24-hour	27.7	13.6	0	0
SW Demo Boundary	PM ₁₀	24-hour	28.1	14.2	0	0

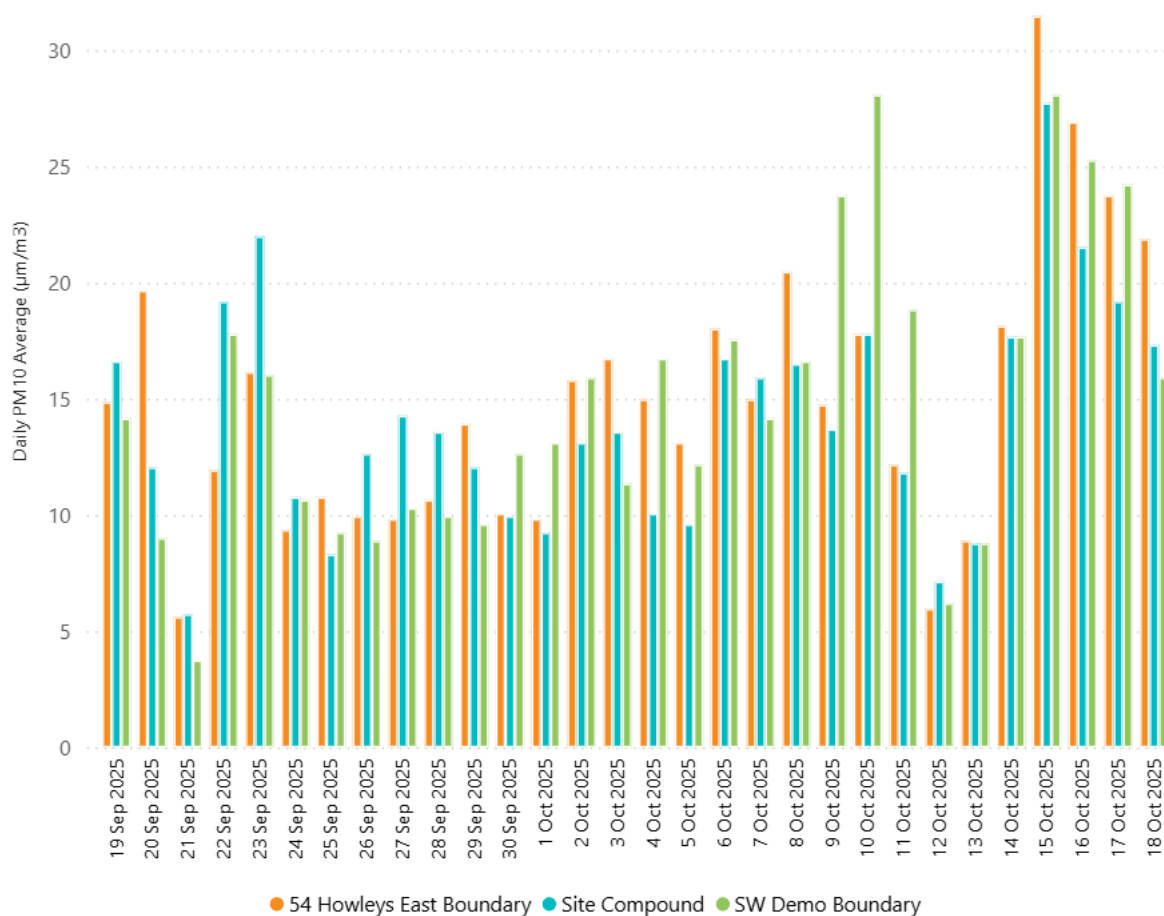


Figure 8: Daily Averages PM₁₀ Results at Monash

3.4.1 Analysis

Measures implemented to proactively manage dust on this site include water carts and street sweepers. In addition, daily observations by supervisors and environmental representatives are performed to respond to areas of concern. Visual air inspections are also undertaken to proactively monitor and confirm there are no off-site dust impacts due to construction activities on site.

There were no elevated PM₁₀ events during the reporting period.

3.5 Meteorological Conditions

Table 8: Daily weather observations for Moorabbin, Victoria

Statistic	Min Temperature (°C)	Max Temperature (°C)	Maximum Wind Gust Direction	Maximum Wind Gust Speed (km/h)	Relative Humidity @ 9:00 AM (%)
Mean	10.0	19.8	N/A	50.3	62.0
Lowest	4.7	14.2	WNW	24.0	35.0
Highest	15	31.2	WNW	85.0	86.0

Table 9: Daily rain data for Moorabbin, Victoria

Statistic	Rain (mm)
Daily Low	0.0
Daily High	6.0
Total	25.2

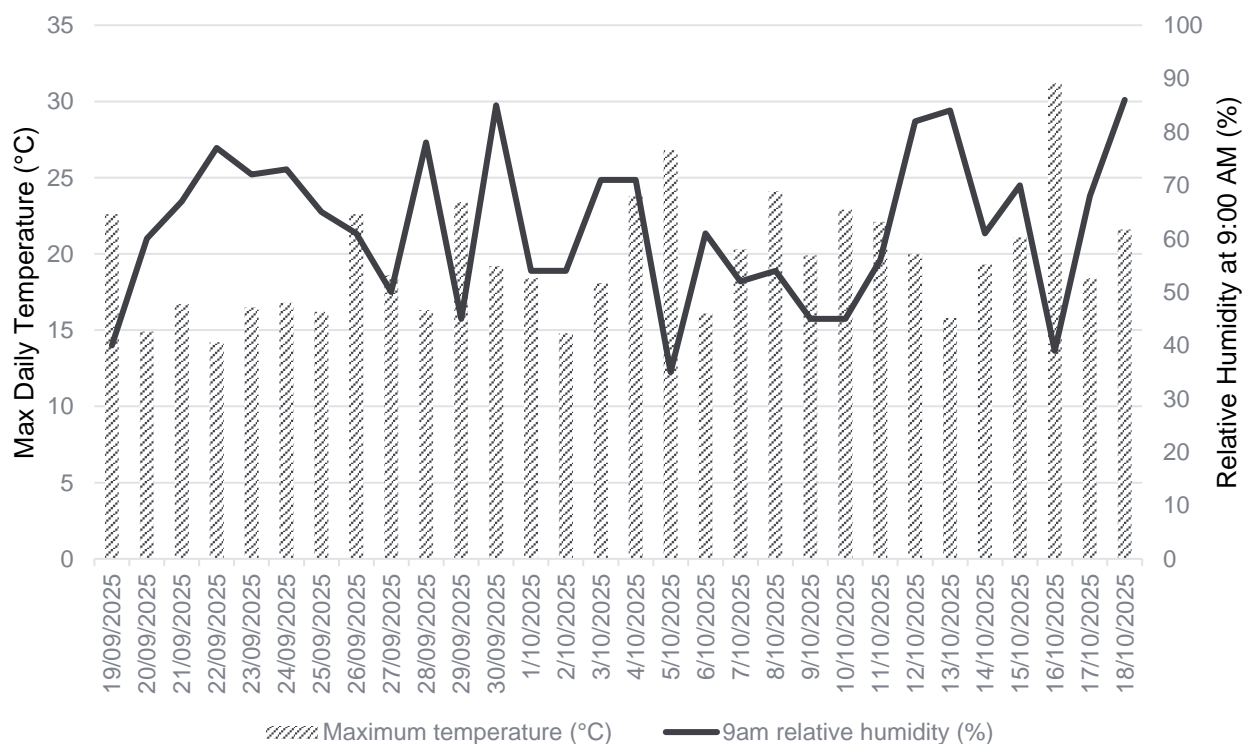


Figure 9: Daily relative humidity and temperature observations for Moorabbin, Victoria

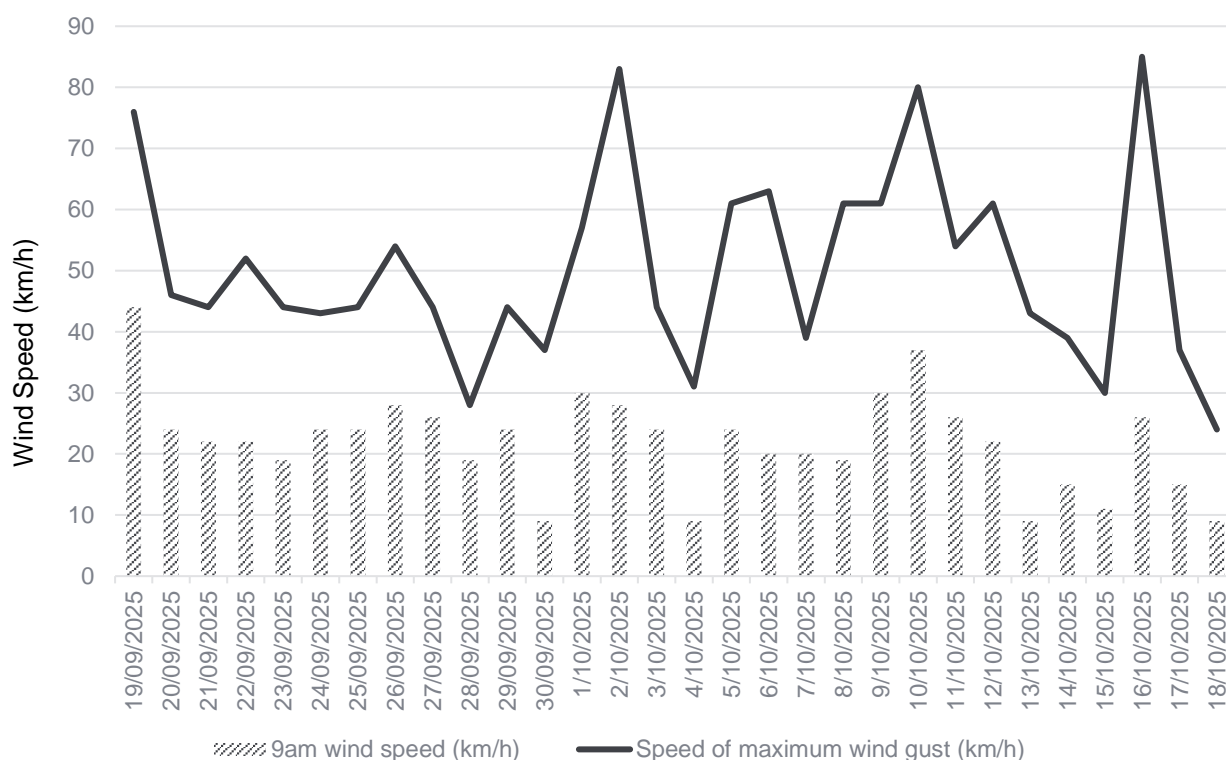


Figure 10: Daily wind speed observations for Moorabbin, Victoria

4 Quality Assurance

4.1 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 2025 to 18 October 2025 are shown below.

Table 10: Daily PM₁₀ Air Quality Monitoring Data Capture

Location	Available Periods	Collected Periods	Data Capture	Details
Train Stabling Facility West				
North	30	30	100%	There were no interruptions to monitoring at this location during the reporting period
South	30	30	100%	There were no interruptions to monitoring at this location during the reporting period
Linear Reserve North	30	30	100%	There were no interruptions to monitoring at this location during the reporting period

Location	Available Periods	Collected Periods	Data Capture	Details
Linear Reserve South	30	30	100%	There were no interruptions to monitoring at this location during the reporting period
Clarinda TBM launch site				
South Boundary	30	30	100%	There were no interruptions to monitoring at this location during the reporting period
East	30	29	97%	The monitor remained online during the reporting period, however data recording was temporarily interrupted on Wednesday 15 October due to a technical issue. This was promptly identified and resolved, with data recording resuming the following day.
North West	30	30	100%	There were no interruptions to monitoring at this location during the reporting period
Clayton				
Central	30	30	100%	There were no interruptions to monitoring at this location during the reporting period
North West	30	30	100%	There were no interruptions to monitoring at this location during the reporting period
South	30	30	100%	There were no interruptions to monitoring at this location during the reporting period
East (Church)	30	30	100%	There were no interruptions to monitoring at this location during the reporting period
Monash				
Compound	30	30	100%	There were no interruptions to monitoring at this location during the reporting period
SW Demo Boundary	30	30	100%	There were no interruptions to monitoring at this location during the reporting period
54 Howleys East Boundary	30	30	100%	There were no interruptions to monitoring at this location during the reporting period

4.2 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.

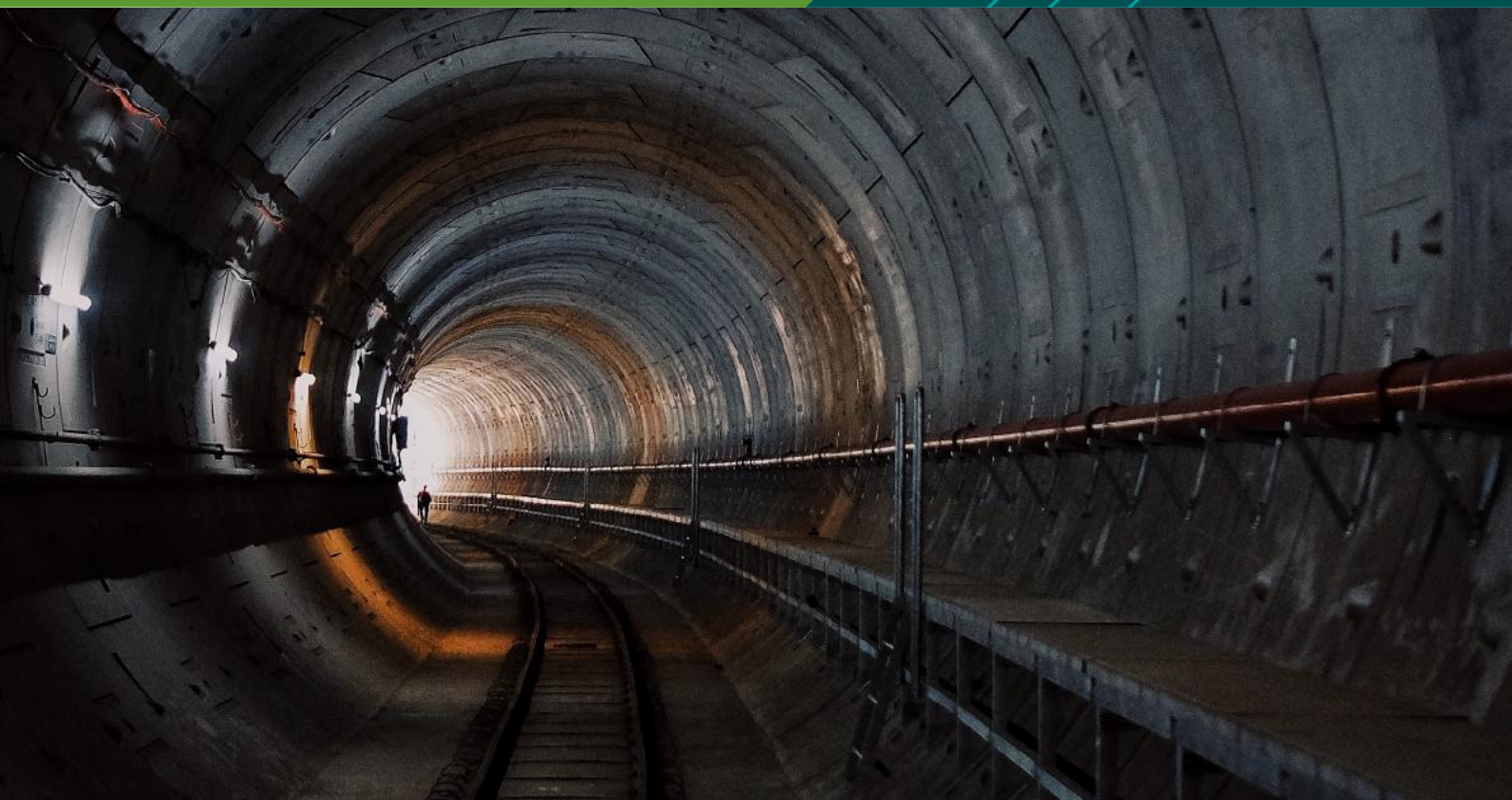
Table 11: Monitoring device calibration information

Location	Device Serial Number	Calibration Date	Calibration Due
Train Stabling Facility West			

Location	Device Serial Number	Calibration Date	Calibration Due
North	HEX-000418	17 Feb 2025	17 Feb 2027
South	HEX-000498	20 Sep 2024	20 Sep 2026
Linear Reserve North	HEX-000706	19 Feb 2025	19 Feb 2027
Linear Reserve South	HEX-000795	18 Dec 2024	18 Dec 2026
Clarinda			
South Boundary	HEX-000348	19 Feb 2025	19 Feb 2027
East Boundary	HEX-000780	18 Dec 2024	18 Dec 2026
North West Boundary	HEX-000791	18 Dec 2024	18 Dec 2026
Clayton			
Central	HEX-000203	19 Mar 2025	19 Mar 2027
East (Church)	HEX-000705	24 Oct 2024	24 Oct 2026
North West	HEX-000623	19 Feb 2025	19 Feb 2027
South	HEX-000744	27 Nov 2024	27 Nov 2026
Monash			
Site Compound	HEX-000400	11 Jun 2025	11 Jun 2027
SW Demo Boundary	HEX-000527	16 Jul 2025	16 Jul 2027
54 Howleys East Boundary	HEX-000671	11 Jun 2025	11 Jun 2027

Glossary

Term / Abbreviation	Definition
$\mu\text{g}/\text{m}^3$	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.
EAQDMP	The Environmental Air Quality and Dust Management Plan (EAQDMP) is environmental management documentation prepared by the PC to manage and monitor air quality impacts during construction of SRL East. It includes the RMMP and TARP and is verified by the IEA.
EES	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.
EMF	The Environmental Management Framework (EMF) provides a transparent and integrated framework to manage environmental effects of the SRL East Project during construction and operation to achieve acceptable environmental outcomes.
EPA	Environment Protection Authority (EPA) is the 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.
EPRs	The Environmental Performance Requirements (EPRs) define the environmental outcomes that must be achieved during the design, construction and operation of SRL East and are included within the EMF.
ERS	The Environmental Reference Standard (ERS) is a tool made under the Environment Protection Act 2017 to identify and assess environmental values, including air quality, in Victoria.
IEA	The Independent Environmental Auditor (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.
PC	Principal Contractor
PM_{10}	Particulate matter with an aerodynamic diameter of 10 micrometres (μm) or less. PM_{10} particles are small enough to have a potential impact on human health.
RMMP	The Risk Management and Monitoring Program (RMMP) 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.
TARP	The Trigger Action Response Protocol (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.
TARP Triggered during the reporting month	This refers to the number of days TARP trigger criteria or the Air Quality Objective was exceeded during the reporting month.
TARP actions implemented during the reporting month	This refers to the number of days additional TARP mitigation measures or actions were required to be implemented as a response to project related exceedances. These actions are in addition to existing controls implemented on site.



SUBURBAN RAIL LOOP EAST
Tunnels North

**Air Quality Monthly Report 19 Sep – 18
Oct 2025**

SRL-WPD-TVC-NAP-REP-XLP-PWD-000006 Rev C

5 November 2025



Version control and record

Version	Date	Comments
A	22/10/2025	Report Issued to SRLA
B	27/10/2024	To addressed comments from SRLA Rev A
C	5/11/2025	To addressed comments from SRLA Rev C

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Glossary

Term	Definition
$\mu\text{g}/\text{m}^3$	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.
BUW	Burwood site compound
EAQDMP	The Environmental Air Quality and Dust Management Plan (EAQDMP) is environmental management documentation prepared by the PC to manage and monitor air quality impacts during construction of SRL East. It includes the RMMP and TARP and is verified by the IEA.
EES	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.
EMF	The Environmental Management Framework (EMF) provides a transparent and integrated framework to manage environmental effects of the SRL East Project during construction and operation to achieve acceptable environmental outcomes.
EPA	Environment Protection Authority (EPA) is the 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.
EPRs	The Environmental Performance Requirements (EPRs) define the environmental outcomes that must be achieved during the design, construction and operation of SRL East and are included within the EMF.
ERS	The Environmental Reference Standard (ERS) is a tool made under the Environment Protection Act 2017 to identify and assess environmental values, including air quality, in Victoria.
ESF	Emergency Support Facility
IEA	The Independent Environmental Auditor (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.
PC	Principal Contractor
PM₁₀	Particulate matter with an aerodynamic diameter of 10 micrometres (μm) or less. PM ₁₀ particles are small enough to have a potential impact on human health.
RMMP	The Risk Management and Monitoring Program (RMMP) 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.
SRL	Suburban Rail Loop
TARP	Trigger Action Response Protocol
TARP Triggered during the month	Refers to the number of days TARP trigger criteria or the Air Quality Objective was exceeded during the reporting month.
TARP actions implemented during the reporting month	Refers to the number of days additional TARP mitigation measures or actions were required to be implemented as a response to project related exceedances. These actions are in addition to existing controls implemented on site.
TV	Terra Verde

Executive Summary

Key Outcomes

Key outcomes arising from the monthly air quality monitoring program:

- All instances of elevated PM₁₀ levels were investigated and additional controls implemented, where required.
- Data from the ESF southwest monitor was not recorded from the 25 September to the 17 October due to a firmware issue. The monitor was inspected and back online on the 18 October.
- At the Emergency Support Facility (ESF), TARP Level 1 was implemented on one day during the reporting period while demolition works were undertaken. Monitoring data was reviewed, a visual inspection was carried out, and dust suppression controls were implemented until conditions returned to normal.
- At Burwood (BUW), during excavation and piling platform leveling works, TARP Level 1 was actioned on four separate days. Water was used to wet down the work zone until conditions returned to normal.
- Proactive response undertaken to confirm there were no offsite dust impacts.

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 main works construction site for the period between 19 Aug 2025 – 18 Sep 2025 in accordance with SRL East EMF and EPRs AQ1 and AQ2.

Tunnels North works for SRL East commenced at the ESF on 30 June 2025, 601 High Street Road, Mount Waverley. Terra Verde (TV) is delivering the Tunnels North works as Principal Contractor (PC).

The PC 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 PM₁₀ have the potential to impact human health. PM₁₀ refers to particles with an aerodynamic diameter of 10 µm or less.

This report compares the measured concentrations 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 PM₁₀ which are measured over a 24-hour averaging period and are shown in Table 1 below. The objectives are risk-based concentrations that are not intended to be compliance levels, but they assist the PC to understand the risk to human health. When the instrumental monitor and/or visual observations identify a change in site conditions this prompts the PC to take actions on site to reduce dust impacts, and review mitigation measures applied.

Scope of Reporting

Site activities and operations undertaken on the ESF site during the month included:

- Hoarding installation
- Excavation works
- Installation of water treatment plan
- General works, unloading delivery materials and housekeeping works

Site activities and operations undertaken on the BUW site during the month included:

- Site establishment,
- Tree removal
- STAS Excavation
- Piling platform leveling
- Filling Drainage works

Water Treatment Plant commissioning and decommissioning

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

Location	Parameter	Avg Period	Max Conc. (µg/m ³)	Median Conc. (µg/m ³)	Air Quality Objective (µg/m ³)	Days TARP Triggered in the Month	Days TARP Actions Implemented in the Month
Representative Background Locations							
EPA - Alphington	PM ₁₀	24-hour	31.5	15.4	50	N/A	N/A
Mount Waverley - ESF							
ESF Northwest	PM ₁₀	24-hour	43.8	18.1	50	0	NA
ESF Southwest	PM ₁₀	24-hour	47.3	NA see notes	50	1	NA
Burwood- BUW							
BUW East	PM ₁₀	24-hour	33.3	8.5	50	4	4
BUW South	PM ₁₀	24-hour	41.3	16.2	50	4	4

Note: The southwest monitor at ESF recorded missing data from 25 September to 17 October due to a firmware issue. It came back online on 18 October.

At BUW, the monitors were installed on 2 October (South) and 29 September (East), as site access for Terra Verde commenced on that date.

1. Introduction

1.1 SRL East

Suburban Rail Loop (SRL) will deliver a 90km orbital rail line connecting Melbourne's middle suburbs, linking every major train service from the Frankston Line to the Werribee Line via Melbourne Airport and transforming our public transport network.

SRL East from Cheltenham to Box Hill is now in major construction. The new rail line will connect major employment, health, education and retail destinations in Melbourne's east and south east, slashing travel times, reducing congestion and connecting passengers travelling on the Gippsland corridor to destinations across Melbourne.

Tunnels North works for SRL East commenced at the ESF site (601 High Street Road, Mount Waverley) on 30 June 2025, and at the Burwood site compound (Burwood Highway) on 29 September 2025. . TV is delivering the Tunnels North works as PC. The works will involve shaft excavation to enable ventilation and other support of tunnelling activity.

1.2 Environmental Management Framework

The EMF for SRL East 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 of the Project. The EMF is available on 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 EES and the Minister's Assessment, dated 5 August 2022.

The EMF requires the PC to develop and implement an EAQDMP. As part of implementing this document plan, the PC is required to conduct monitoring of PM₁₀ 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 proactive and reactive triggers that prompt actions on site to reduce dust impacts, and review mitigation measures applied.

The PC regularly reviews the monitoring data at each site, for the purpose of assessing the effectiveness of EAQDMP implementation. The verified results of the PM₁₀ 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 Alphington is used as the representative control site for the ESF.

Without effective management, construction of SRL East 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 PC 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 PC 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 PM₁₀ have the potential to impact human health. PM₁₀ 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 SRL East, 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 PC to understand the risk to human health. The ERS sets out the air quality objectives for PM₁₀ which are measured over a 24-hour averaging period, as reproduced below in Table 2.

Table 2: Ambient air quality objectives for PM₁₀

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

The measured concentrations (which include both existing background concentrations and SRL East's incremental contribution over a 24-hour period) are presented in Section 3 and compared against the air quality objective. 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 construction sites, to represent local air quality conditions, in positions that enable the PC to adequately measure potential impact of works on local sensitive receivers including residents.

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
Mount Waverley – ESF northwest	30 June 2025	Latitude: -37.87036° Longitude: 145.14550°	PM ₁₀	Alphington EPA monitoring station
Mount Waverley – ESF southwest	30 June 2025	Latitude: -37.87067° Longitude: 145.14543°	PM ₁₀	Alphington EPA monitoring station
Burwood Site Compound -BUW East	29 September 2025	Latitude: -37.85067° Longitude: 145.1122°	PM ₁₀	Alphington EPA monitoring station
Burwood Site Compound -BUW South	2 October 2025	Latitude: -37.85232° Longitude: 145.11106°	PM ₁₀	Alphington 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.

3. Results

Figure 1 shows the location of the ESF air quality monitoring stations. Data has been provided in tabular and graphical form (see Table 4 and Figure 2) to visually present 24-hour averages of PM₁₀ over the monthly period. The data included in this report has been verified by Terra Verde and relevant subject matter experts.

3.1 ESF

ESF-Air Quality Monitoring Locations



Figure 1: ESF air quality monitoring stations

Monitor Number	Monitoring Location	Max Daily PM ₁₀ Concentration (µg/m ³)	Median Daily PM ₁₀ Concentration (µg/m ³)	Air Quality Objective (µg/m ³)	Days TARP Triggered in the Month	Days TARP Actions Implemented in the Month
-	Representative Background – Alphington EPA monitoring station	31.5	15.4	50	N/A	N/A
1	Mount Waverley ESF Northwest	43.8	18.1	50	0	0
2	Mount Waverley ESF Southwest	47.3	NA see notes	50	1	1

Table 4: ESF PM₁₀ results

Note The southwest monitor at ESF recorded missing data from 24 September to 17 October due to a firmware issue. It came back online on 18 October

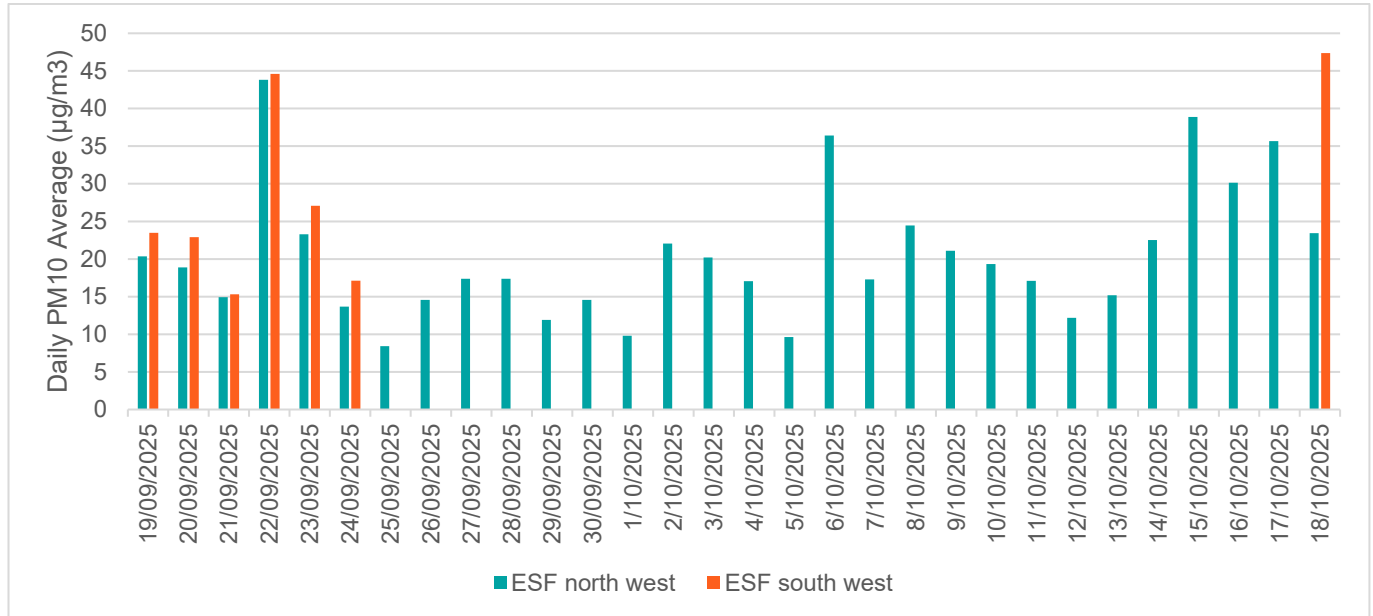


Figure 2: ESF PM₁₀ daily averages from 19 September to 18 October

3.1.1 Daily Objective Analysis

No daily averages above the daily objective were recorded during the reporting period. The maximum daily average PM₁₀ concentration was 47.3 µg/m³ at the ESF southwest monitoring location during hoarding installation and jackhammer use on the southwest site. A proactive visual inspection was carried out, and no dust was observed leaving the site.

It is noted that the ESF northwest and southwest monitors have been positioned on the hoarding.

Data from the southwest monitor was not recorded from 25 September to 17 October due to a firmware issue which has since been resolved.

3.2 BURWOOD



Figure 3. BUW air quality monitoring stations

Monitor Number	Monitoring Location	Max Daily PM ₁₀ Concentration (µg/m³)	Median Daily PM ₁₀ Concentration (µg/m³)	Air Quality Objective (µg/m³)	Days TARP Triggered in the Month	Days TARP Actions Implemented in the Month
-	Representative Background – Alphington EPA monitoring station	31.5	15.4	50	N/A	N/A
1	Burwood- BUW East	33.3	8.5	50	4	4

Monitor Number	Monitoring Location	Max Daily PM ₁₀ Concentration (µg/m³)	Median Daily PM ₁₀ Concentration (µg/m³)	Air Quality Objective (µg/m³)	Days TARP Triggered in the Month	Days TARP Actions Implemented in the Month
2	Burwood-BUW South	41.3	16.2	50	4	4

Note: At BUW, the monitors were installed on 2 October (East) and 29 September (South), as site access for Terra Verde commenced on that date.

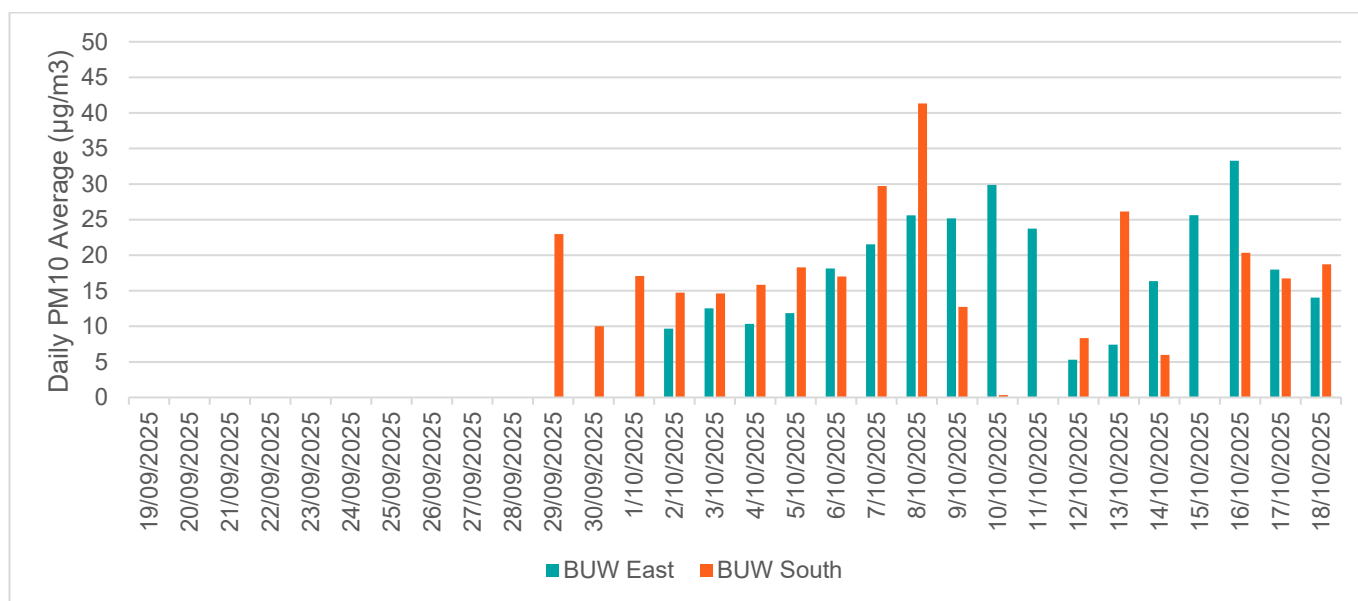


Figure 4. PM₁₀ daily averages from 19 September to 18 October

3.2.1 Daily Objective Analysis

No daily averages above the daily objective were recorded during the reporting period. The maximum daily average PM₁₀ concentration was 41.3 µg/m³ at the BUW South monitoring location during piling platform leveling works. A proactive visual inspection was carried out, and dust controls were in place. Water carts operated on site until conditions returned to normal.

Data from 10 to 12 October are missing due to a wiring issue with the BUW South monitor, which prevented data from being recorded. The monitor was inspected and has since returned to normal operation.

It is noted that the site monitors are not yet installed on the hoarding; they will be positioned once piling platform leveling works are completed.

3.2.2 TARP Analysis

The TARP uses the continuous data from the on-site PM₁₀ monitors to enable short-term, proactive and reactive air quality management. Alert values are set at three 'levels' in response to PM₁₀ concentrations:

- Level 1 – Preventive Alert Level: investigate and prepare.
- Level 2 – Preventive Action Level: action required.
- Level 3 – Trigger Level: further action and changes to operations required.

At ESF, during demolition of the retaining wall and hoarding installation works, Level 1 of the TARP was actioned on one occasion. Monitoring data was reviewed, a visual inspection was undertaken, and dust suppression controls were implemented until conditions returned to normal.

At BUW, during excavation and piling platform leveling works, Level 1 of the TARP was actioned on four separate days. Water was called to the area to wet down the work zone until conditions returned to normal.

All other instances of elevated PM10 levels were reported outside of normal working hours or during inclement weather when no construction works were occurring and were therefore discounted from this analysis.

3.3 Meteorological Conditions

Table 5: Daily weather observations for Melbourne (Olympic Park), Victoria 19/09/2025 – 18/10/2025. 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	10.8	20.2	N/A	41.1	59.7
Lowest	6.4	13.9	SSW	22	36
Highest	15.2	30.1	S	76	79

Table 6: Daily rain data for Melbourne (Olympic Park), Victoria 19/09/2025 – 18/10/2025. Data Source BOM.

Statistic	Rain (mm)
Daily Low	0
Daily High	4
Total	19

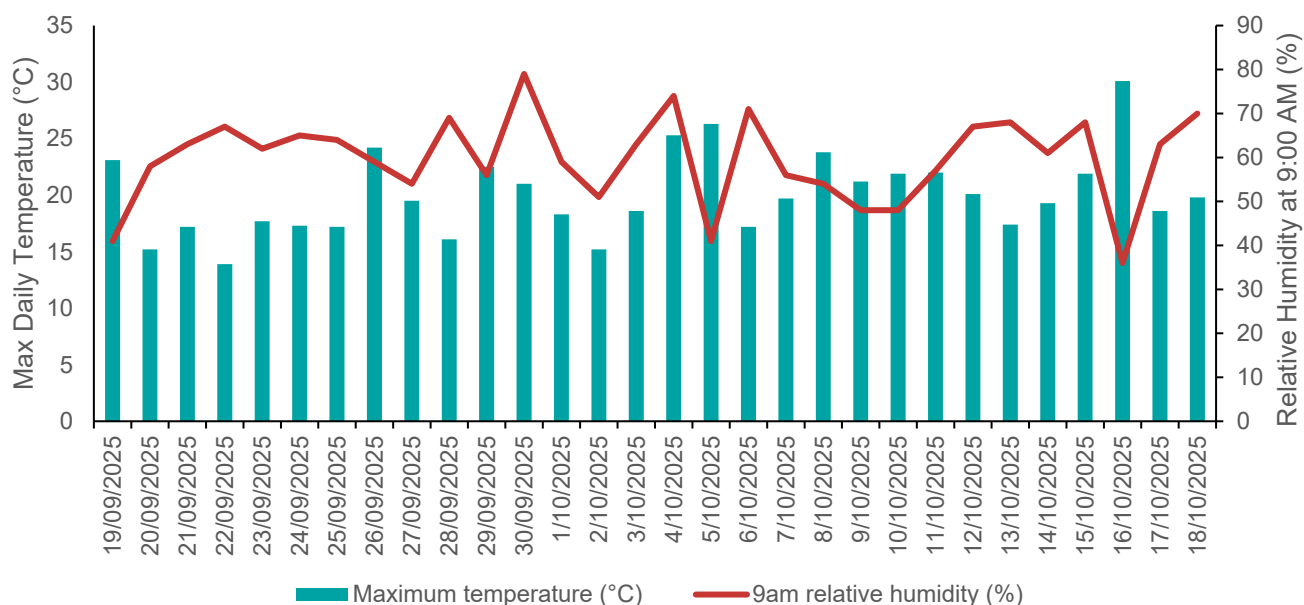


Figure 5: Daily relative humidity and temperature observations for Melbourne (Olympic Park), Victoria 19/09/2025 – 18/10/2025. Data Source BOM.

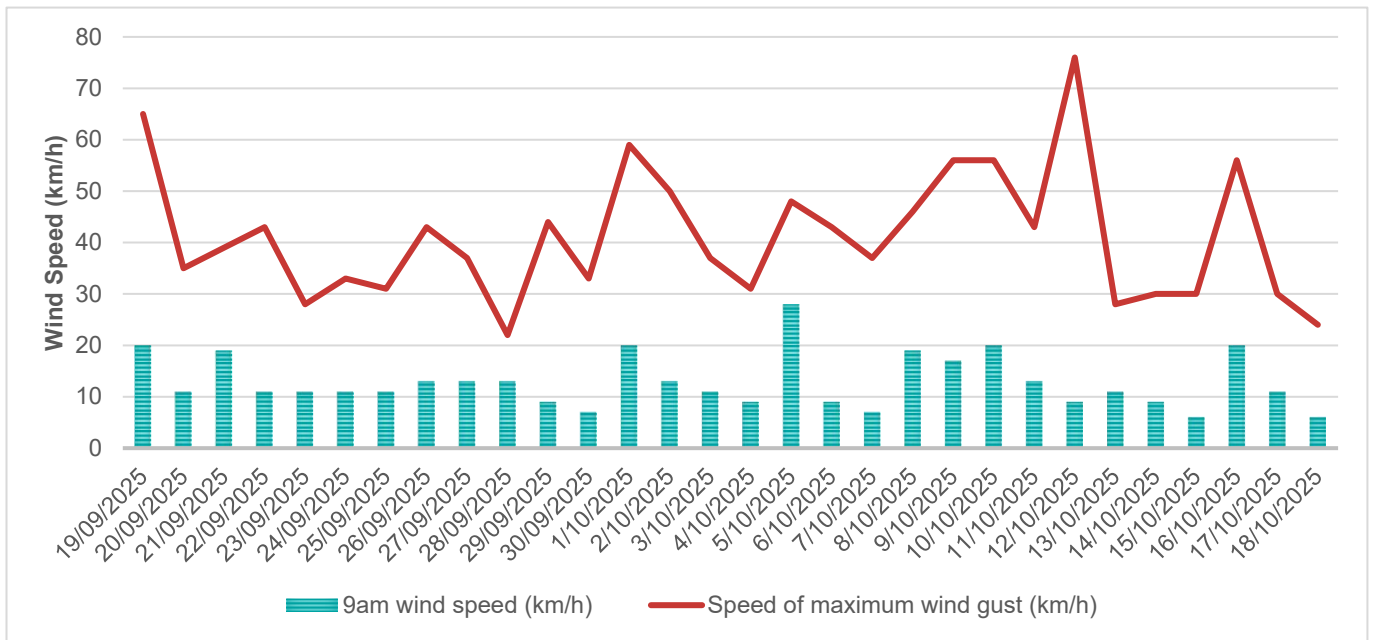


Figure 6. Daily wind speed observations for Melbourne (Olympic Park), Victoria 19/09/2025 – 18/10/2025. Data Source BOM

4. Quality Assurance

4.1 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 2025 – 18 October 2025 are shown in Table 7, below.

Data capture statistics were 100% for all parameters at the ESF northwest monitor and 97% at the southwest monitor for the reporting period. It is noted that main works had not commenced at Glen Waverley during the reporting period. Note: Burwood monitors only active from week commencing 30th September in line with the start of Burwood works and not 19th September with reporting dates. Therefore, data capture is not an accurate representation of reporting period.

Table 7: Air quality monitoring, data capture summary

Location	Parameter	Averaging Period	Collected Periods	Available Periods	Data Capture
Mount Waverley – ESF northwest	PM ₁₀	24-hours	31	31	100%
Mount Waverley – ESF southwest	PM ₁₀	24-hours	31	7	23%
Burwood Site Compound - BUW East	PM ₁₀	24-hours	31	17	55%
Burwood Site Compound - BUW South	PM ₁₀	24-hours	31	18	58%

4.2 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.

Table 8: Monitoring device calibration information

Location	Device Serial Number	Calibration Date	Calibration Due
Mount Waverley – ESF northwest	HEX-001065	11/06/2025	11/06/2027
Mount Waverley – ESF southwest	HEX-001185	11/06/2025	11/06/2027
Burwood Site Compound -BUW East	HEX-000635	11/06/2025	11/06/2027
Burwood Site Compound -BUW South	HEX-000707	11/06/2025	11/06/2027