

Queensland Air Monitoring 2025

**National Environmental Protection
(Ambient Air Quality) Measure**

Prepared by: Air Quality Monitoring,
Department of the Environment, Tourism
Science and Innovation.

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August 2026

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Summary

This document fulfils annual reporting requirements for Queensland under clause 18 of the National Environment Protection (Ambient Air Quality) Measure (AAQ NEPM).

Ambient air quality monitoring at AAQ NEPM sites in Queensland from January to December 2025 recorded no exceedances of the AAQ NEPM standards for carbon monoxide, nitrogen dioxide, and lead at any Queensland monitoring station. Exceedances of the AAQ NEPM standards occurred for:

- 8-hour average ozone concentration at the Raceview monitoring site in South East Queensland due to the presence of added ozone precursor pollutant emissions from vegetation fires during meteorological conditions conducive to ozone formation;
- 1-hour and 1-day average sulfur dioxide concentrations at The Gap in Mount Isa due to industrial emissions;
- 1-day average PM₁₀ (particles less than 10 micrometres in diameter) concentration at Rocklea and Raceview in South East Queensland, South Gladstone in Gladstone, West Rockhampton in Rockhampton, West Mackay in Mackay and North Ward in Townsville due to smoke impacts; at The Gap in Mount Isa due to a combination of region-wide windblown dust and smoke from a vegetation fire; at Raceview in South East Queensland due to dust impacts from local commercial facilities; and at Woree in Cairns due to windblown dust from nearby housing development earthworks.
- 1-day average PM_{2.5} (particles less than 2.5 micrometres in diameter) concentration at Springwood, Southport and Raceview in South East Queensland, Toowoomba, Maryborough, South Gladstone in Gladstone, West Rockhampton in Rockhampton, West Mackay in Mackay, North Ward in Townsville, Woree in Cairns and The Gap in Mount Isa due to smoke impacts from bushfires or permitted hazard-reduction burns; and at West Mackay due to smoke from agricultural burning.

Most PM₁₀ and PM_{2.5} 1-day standard exceedances recorded in 2025 were directly attributed to exceptional events, including region-wide dust storms, bushfires or authorised hazard-reduction burns. These events are excluded from compliance determinations under the AAQ NEPM framework.

The AAQ NEPM goals were met across all Queensland regions except for the following cases:

- 1-hour and 1-day average sulfur dioxide concentrations at The Gap (Mount Isa) due to industrial emissions;
- Raceview (South East Queensland): PM₁₀ exceedances on 18 September and 14 October due to dust impacts from local commercial facilities;
- West Mackay (Mackay): PM_{2.5} exceedance on 25 September due to smoke from agricultural burning; and
- Woree (Cairns): exceedances on 26 September, 3, 4 and 8 October due to dust impacts from nearby construction activities (with some contribution from hazard-reduction burn smoke on 3 and 4 October).

The approach to population exposure evaluation and reporting adopted by Queensland using data from the entire Queensland ambient air quality monitoring network (including non-AAQ NEPM reporting stations) identified that in 2025:

- annual PM_{2.5} exposure ranged between 70 and 95 per cent of the AAQ NEPM standard in locations meeting the Australian/New Zealand Standard AS/NZS 3580.1.1 neighbourhood classification;
- annual nitrogen dioxide exposure ranged between 17 and 37 per cent of the AAQ NEPM standard in locations meeting the AS/NZS 3580.1.1 neighbourhood classification; and
- maximum 8-hour ozone exposure ranged between 58 and 88 per cent of the AAQ NEPM standard in locations meeting the AS/NZS 3580.1.1 neighbourhood classification.

Introduction

Clause 18 of the National Environment Protection (Ambient Air Quality) Measure (AAQ NEPM)¹ requires all jurisdictions to submit an annual report on their compliance with the Measure. The required content of these reports is specified in the *National Environment Protection (Ambient Air Quality) Measure Technical Paper No. 8, Annual Reports* (AAQ NEPM Technical Paper No. 8)².

The Coastal and Air team within the Science Division of the Department of Environment, Tourism, Science and Innovation (DETSI) operates the Queensland ambient air quality monitoring network. This network includes air monitoring to assess compliance with the standards and goals of the AAQ NEPM, as detailed in the *Ambient air quality monitoring plan for Queensland*³, together with additional ambient and investigative air monitoring for other purposes.

This report documents Queensland's compliance with the standards and goals of the AAQ NEPM in 2025 in accordance with the AAQ NEPM Technical Paper No. 8.

¹ available from www.legislation.gov.au/Details/F2021C00475

² available from www.nepc.gov.au/resource/ephc-archive-ambient-air-quality-nepm

³ available from www.qld.gov.au/environment/pollution/monitoring/air-reports/

Section A – Monitoring summary

Current AAQ NEPM monitoring stations

DETSI monitored ambient air quality in nine of the ten regions identified in the Queensland monitoring plan in 2025 as follows:

- South East Queensland (made up of four sub-regions: North Coast, Brisbane, Gold Coast and Ipswich)
- Toowoomba
- Maryborough – Hervey Bay
- Gladstone
- Rockhampton
- Mackay
- Townsville
- Cairns
- Mount Isa.

Table 1 presents summary information for all AAQ NEPM compliance monitoring stations operating in Queensland during 2025. Figure 1 shows the location of all Queensland AAQ NEPM monitoring stations operating during 2025. Each monitoring station is categorised as one of the following:

- performance monitoring station (PMS) – nominated to measure air quality to assess achievement of the AAQ NEPM goal
- trend station – nominated to measure air quality to identify long-term changes and assess achievement of the AAQ NEPM goal
- campaign station – short-term investigation station, operated for at least one calendar year, to assess the need for ongoing monitoring in the region to assess achievement of the AAQ NEPM goal.
- the location category in provides a qualitative description of the exposed population at each monitoring station.

Table 1 also describes monitoring stations using population coverage descriptors in the National Environment Protection (Ambient Air Quality) Measure Technical Paper No. 3, *Monitoring Strategy*⁴:

- generally representative upper bound (GRUB) – indicative of pollutant concentrations in the upper range occurring in populated areas in the region
- population-average – indicative of air quality experienced by most of the population.

In some instances, data is reported from peak sites where the highest concentrations in the region are expected. This provides an indication of maximum exposure in the region.

Monitoring techniques used at each AAQ NEPM compliance monitoring site are listed in Table 1.

⁴ available from www.nepc.gov.au/resource/ephc-archive-ambient-air-quality-nepm

DETSI generally monitors air quality in compliance with the Australian Standard (AS) methods specified in the AAQ NEPM. An exception to the use of AS methods during 2025 was the measurement of PM₁₀ and PM_{2.5} by instrumentation using a backscattering of polychromatic light technique at all sites.

Initially, PM₁₀ and PM_{2.5} data was collected using a tapered element oscillating balance (TEOM) instrument fitted with filter dynamics measurement system (FDMS) units at Rocklea in South East Queensland until 19 May 2025.

PM₁₀ and PM_{2.5} data across all sites, and at Rocklea after 19 May 2025, were obtained using a Teledyne API Model T640X monitor. The T640X monitor is an optical aerosol spectrometer that uses backscattering of polychromatic light to determine particle mass concentration. The T640X monitor has United States Environment Protection Agency accreditation as an equivalent method for measurement of PM₁₀ and PM_{2.5}.

Lead monitoring by the Queensland Government at the Coast Guard monitoring site in Townsville ceased in 2023 when operation of the monitoring site transitioned fully to Port of Townsville Limited in line with the conditions of their Environmental Authority. From 2024 onwards, lead data has been reported based on measurements from the Townsville North Ward monitoring site.

With the exception of West Rockhampton, all sites met data availability criteria and are therefore able to provide a valid assessment of compliance with the AAQ NEPM standards and goals for 2025.

Monitoring only commenced at the West Rockhampton site in September 2025. As a result, data availability at this site was insufficient to provide a valid assessment of compliance with AAQ NEPM standards and goals.

Table 1. Summary information for 2025 Queensland AAQ NEPM monitoring sites

Site	Station type	Date established	Pollutants measured	Monitoring technique	Location category	Non-conformance with AS3580.1.1 siting criteria	Main pollutant sources impacting station
South East Queensland							
<i>North Coast sub-region</i>							
Mountain Creek	PMS – GRUB	July 2001	O ₃ NO ₂ PM ₁₀ PM _{2.5}	AS 3580.6.1–2023 AS 3580.5.1–2023 TAPI T640X TAPI T640X	Residential	Nil	Major roads, forestry/ agricultural burning
<i>Brisbane sub-region</i>							
Deception Bay	Trend – GRUB	June 1994	O ₃ NO ₂ PM ₁₀ PM _{2.5}	AS 3580.6.1–2023 AS 3580.5.1–2023 TAPI T640X TAPI T640X	Residential	Trees within 20m west of site	Major roads
Woolloongabba	Trend – Peak	June 1998 (relocated June 2017)	CO	AS 3580.7.1–2023	Inner city roadside	Nil	Major roads
Rocklea	Trend – GRUB	January 1978 (relocated March 1994 and June 2007)	O ₃ NO ₂ PM ₁₀ PM _{2.5}	AS 3580.6.1–2023 AS 3580.5.1–2023 AS 3580.9.16:2022 (TEOM) until 19 May; TAPI T640X thereafter AS 3580.9.13:2022 (TEOM) until 19 May; TAPI T640X thereafter	Light industry/ residential	Nil	Major roads
Springwood	PMS – Population average	March 1999	O ₃ NO ₂ SO ₂ PM ₁₀ PM _{2.5}	AS 3580.6.1–2023 AS 3580.5.1–2023 AS 3580.4.1–2023 TAPI T640X TAPI T640X	Residential	Nil	Major roads
<i>Gold Coast sub-region</i>							
Southport	PMS – Population average	February 2018	O ₃ NO ₂ PM ₁₀ PM _{2.5}	AS 3580.6.1–2023 AS 3580.5.1–2023 TAPI T640X TAPI T640X	Residential	Buildings and trees within 20m of site	Major roads

Table 1 (continued). Summary information for 2025 Queensland AAQ NEPM monitoring sites

Site	Station type	Date established	Pollutants measured	Monitoring technique	Location category	Non-conformance with AS3580.1.1 siting criteria	Main pollutant sources impacting station
<i>Ipswich sub-region</i>							
Raceview	Trend – GRUB	September 2024	O ₃ NO ₂ SO ₂ PM ₁₀ PM _{2.5}	AS 3580.6.1–2023 AS 3580.5.1–2023 AS 3580.4.1–2023 TAPI T640X TAPI T640X	Industry/ residential	Trees within 20m of site	Major roads, industry (landfill, composting facilities, concrete batching)
<u>Toowoomba</u>							
Toowoomba	PMS – Population average	January 2022	PM ₁₀ PM _{2.5}	TAPI T640X TAPI T640X	Residential	Nil	Major roads
<u>Gladstone</u>							
Boyne Island	Trend – GRUB	October 2008	CO	AS 3580.7.1–2023	Industry/ residential	Nil	Industry (power station, metals processing)
South Gladstone	Trend – GRUB	July 1992	NO ₂ SO ₂ PM ₁₀ PM _{2.5}	AS 3580.5.1–2023 AS 3580.4.1–2023 TAPI T640X TAPI T640X	Industry/ residential	Nil	Major roads, industry (power station, metals processing)
<u>Rockhampton</u>							
West Rockhampton	PMS – GRUB	September 2025	O ₃ NO ₂ SO ₂ PM ₁₀ PM _{2.5}	AS 3580.6.1–2023 AS 3580.5.1–2023 AS 3580.4.1–2023 TAPI T640X TAPI T640X	Residential	Nil	Major roads, industry (power station)
<u>Mackay</u>							
West Mackay	PMS – GRUB	September 1997 (relocated June 2010)	PM ₁₀ PM _{2.5}	TAPI T640X TAPI T640X	Residential/ rural	Nil	Agricultural burning

Table 1 (continued). Summary information for 2025 Queensland AAQ NEPM monitoring sites

Site	Station type	Date established	Pollutants measured	Monitoring technique	Location category	Non-conformance with AS3580.1.1 siting criteria	Main pollutant sources impacting station
Townsville							
North Ward	PMS – Population average	December 2017 (relocated August 2020)	NO ₂ SO ₂ PM ₁₀ PM _{2.5} Lead	AS 3580.5.1–2023 AS 3580.4.1–2023 TAPI T640X TAPI T640X AS 3580.9.3–2003, with analysis by AS 3580.9.15:2014 (ICP)	Residential	Nil	Major roads, industry (port operations including metal concentrate handling)
Cairns							
Woree	PMS – Population average	March 2023	PM ₁₀ PM _{2.5}	TAPI T640X TAPI T640X	Residential	Nil	Major roads
Mount Isa							
The Gap	PMS – Population average	January 2009	SO ₂ PM ₁₀ PM _{2.5} Lead	AS 3580.4.1–2023 TAPI T640X TAPI T640X AS 3580.9.3–2003, with analysis by AS 3580.9.15:2014 (ICP)	Industry/ residential	Building within 20m north-east of site	Industry (metals smelting, sulfuric acid manufacture)
PMS = performance monitoring station GRUB = generally representative upper bound PM ₁₀ = particles less than 10 micrometres in diameter PM _{2.5} = particles less than 2.5 micrometres in diameter				TEOM = tapered element oscillating microbalance TAPI T640X = Teledyne API optical particle detection ICP = inductively coupled plasma			

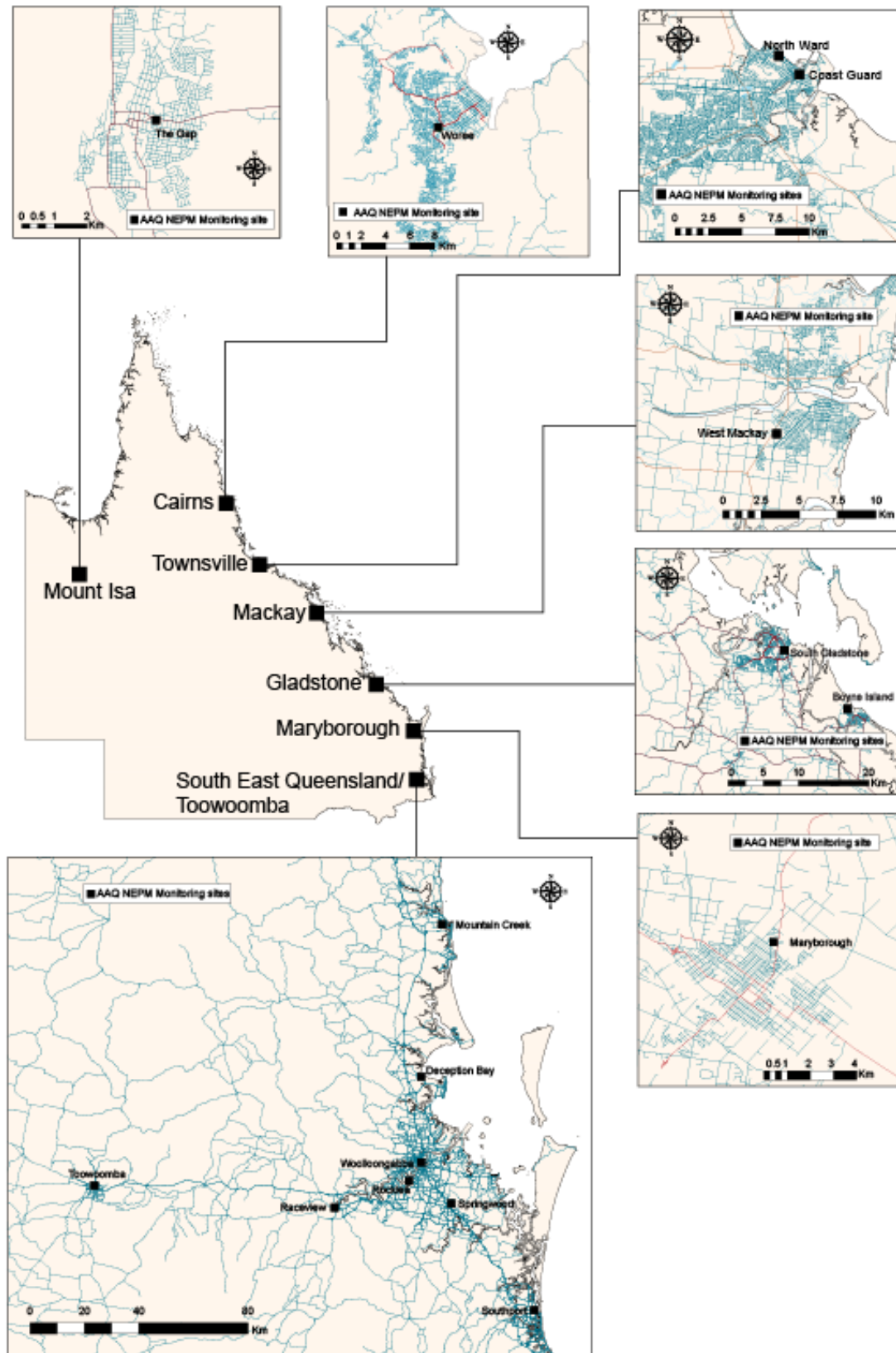


Figure 1. 2025 AAQ NEPM monitoring site locations

Variations to the approved monitoring plan for Queensland

Monitoring is not required if screening criteria specified in the *National Environment Protection (Ambient Air Quality) Measure Technical Paper No. 4 – Screening Procedures*⁵ (AAQ NEPM Technical Paper No. 4) are met.

Table 2 shows the regions and pollutants that satisfied the screening procedures.

Table 2. Regions that satisfy screening procedures and do not require campaign monitoring

Region	CO	NO ₂	Ozone	SO ₂	PM ₁₀	PM _{2.5}	Lead
South East Queensland	–	–	–	–	–	–	A
Toowoomba	A	A	A	F	–	–	F
Maryborough – Hervey Bay	F	E & F	–	F	–	–	F
Bundaberg	F	E & F	–	F	–	–	F
Gladstone	–	–	A	–	–	–	F
Rockhampton	F	–	–	–	–	–	F
Mackay	F	E & F	–	F	–	–	F
Townsville	F	–	A	–	–	–	–
Cairns	F	E & F	–	F	–	–	F
Mount Isa	F	E & F	–	–	–	–	–

A = Screening by campaign monitoring at a generally representative upper bound (GRUB) monitoring location (with no significant deterioration expected over 5–10 years).

E = Screening by use of generic model results based on gross emission estimates, 'worst case' meteorology estimates and other conservative assumptions.

F = Screening by comparison with a National Environment Protection (Ambient Air Quality) Measure compliant region with greater population, emissions and pollution potential.

The '–' symbol indicates that monitoring is required to assess compliance.

For further information on the screening procedures, refer to National Environment Protection (Ambient Air Quality) Measure Technical Paper No. 4, Screening Procedures, available from www.nepc.gov.au/resource/ephc-archive-ambient-air-quality-nepm.

⁵ available from www.nepc.gov.au/resource/ephc-archive-ambient-air-quality-nepm

Section B – Assessment of compliance with standards and goals

This section presents details of the 2025 compliance assessment for Queensland. Compliance criteria are applied at each performance monitoring station in the state.

Compliance is achieved if approved screening procedures are satisfied or:

- there are no exceedances of the relevant standard specified in Schedule 2 of the AAQ NEPM, and
- data availability was at least 75 per cent in each calendar quarter.

For the purposes of reporting compliance against the standards and goals for photochemical oxidants (as ozone) and PM₁₀ and PM_{2.5} (1-day standard only), monitoring data that has been determined as being directly associated with an exceptional event can be excluded. An exceptional event is defined as a fire or dust occurrence directly related to bushfire, authorised hazard-reduction burning or continental scale windblown dust. Monitoring data associated with such events are included in determination of compliance with the AAQ NEPM goals for 1-year PM₁₀ and PM_{2.5} concentrations.

AAQ NEPM Technical Paper No. 8 states that a data availability rate of at least 75 per cent in each calendar quarter is required to make a valid assessment of compliance. For 2025, all sites with the exception of West Rockhampton met the required data availability and were therefore able to demonstrate compliance with the relevant standards and goals.

Compliance summaries for AAQ NEPM pollutants in 2025 are presented in Table 3 to Table 9.

Carbon monoxide

Table 3. 2025 carbon monoxide compliance summary

Region / performance monitoring station	Data availability rates (% of hours)					Number of exceedances (days)	Performance against the standard and goal
	Q1	Q2	Q3	Q4	Annual		8-hour
<u>South East Queensland</u>							
<i>Brisbane sub-region</i>							
Woolloongabba	99.7	100.0	100.0	99.0	99.7	0	met
<u>Gladstone</u>							
Boyne Island	99.2	79.1	89.4	99.7	91.9	0	met
ND = “not demonstrated” due to insufficient data in one or more quarters. AAQ NEPM standard for CO: 9.0 ppm (8-hour average). AAQ NEPM goal for CO: standard not to be exceeded.							

Regions which do not require monitoring on the basis of screening arguments that carbon monoxide levels are reasonably expected to be consistently below the AAQ NEPM standard are:

- Bundaberg
- Cairns
- Mackay
- Maryborough/Hervey Bay

- Mount Isa
- Rockhampton
- Toowoomba
- Townsville.

Motor vehicles are the main contributor to ambient carbon monoxide concentrations in urban areas. Combustion stoves and wood heaters can also contribute, but their use is minimal in most areas currently monitored in Queensland.

Carbon monoxide concentrations at performance monitoring stations in South East Queensland (at Woolloongabba from 2007 to 2025) were consistently less than 40 per cent of the AAQ NEPM standard (see Section D – Pollutant distribution and trends). Therefore, under screening procedure F in Table 1 of the AAQ NEPM Technical Paper No. 4, carbon monoxide monitoring is not required in coastal Queensland population centres with lower traffic density and warmer winter temperatures than South East Queensland.

At the North Toowoomba monitoring site, campaign monitoring from July 2003 to December 2010 found carbon monoxide concentrations were consistently less than 30 per cent of the AAQ NEPM standard. This satisfies the 60 per cent acceptance limit specified in screening procedure A in Table 1 of the AAQ NEPM Technical Paper No. 4.

In Gladstone, carbon monoxide concentrations at the Boyne Island trend monitoring station were consistently less than 35 per cent of the AAQ NEPM Standard. Under screening procedure F in Table 1 of AAQ NEPM Technical Paper No. 4, carbon monoxide monitoring is not required in Mount Isa based on carbon monoxide concentrations measured in the Gladstone region meeting the 40 per cent acceptance limit and emissions of carbon monoxide being lower in Mount Isa than in the Gladstone airshed⁶.

⁶ National Pollutant Inventory reporting for 2024–25 shows that industrial facilities in Mount Isa emitted 9,100 tonnes of carbon monoxide, compared to 39,000 tonnes emitted from industrial facilities in the Gladstone region (data obtained from www.npi.gov.au).

Nitrogen dioxide

Table 4. 2025 nitrogen dioxide compliance summary

Region / performance monitoring station	Data availability rates (% of hours)					Number of exceedances (days)	Annual average (ppm)	Performance against the standards and goals	
	Q1	Q2	Q3	Q4	Annual			1-hour	1-year
South East Queensland									
North Coast sub-region									
Mountain Creek	99.4	98.3	99.5	91.6	97.2	0	0.003	met	met
Brisbane sub-region									
Deception Bay	98.3	99.7	99.9	99.1	99.2	0	0.004	met	met
Rocklea	97.1	97.9	99.8	97.1	98.0	0	0.010	met	met
Springwood	99.0	99.5	99.7	99.7	99.5	0	0.005	met	met
Gold Coast sub-region									
Southport	99.6	98.3	99.0	97.7	98.7	0	0.004	met	met
Ipswich sub-region									
Raceview	97.7	99.7	97.8	97.9	98.3	0	0.006	met	met
Gladstone									
South Gladstone	99.6	99.6	99.7	99.5	99.6	0	0.005	met	met
Rockhampton									
West Rockhampton	0.0	0.0	14.6	99.3	28.7	0	i.d.	ND	ND
Townsville									
North Ward	99.3	99.0	99.6	98.8	99.2	0	0.002	met	met
ND = “not demonstrated” due to insufficient data in one or more quarters. i.d. = insufficient data to calculate an annual average concentration. AAQ NEPM standards for NO ₂ : 0.080 ppm (1-hour average); 0.015 ppm (1-year average). AAQ NEPM goal for NO ₂ : standards not to be exceeded.									

Regions which do not require monitoring on the basis of screening arguments that nitrogen dioxide levels are reasonably expected to be consistently below the AAQ NEPM standards are:

- Bundaberg
- Cairns
- Mackay
- Maryborough/Hervey Bay
- Mount Isa
- Toowoomba.

The AAQ NEPM Technical Paper No. 4 states that nitrogen dioxide monitoring is not required if a combination of generic modelling (screening procedure E in Table 1 of the AAQ NEPM Technical Paper No. 4) and data from an AAQ NEPM compliant region with greater population, emissions and pollution potential (screening procedure F in Table 1 of the AAQ NEPM Technical Paper No. 4) show that nitrogen dioxide concentrations are below 45 per cent of the NEPM standards. Based on generic modelling conducted by CSIRO (Appendix 1 of the AAQ NEPM Technical Paper No. 4), it was determined nitrogen dioxide concentrations in coastal and inland centres with populations below 250,000 would comply with the acceptance limit for the 1-hour

standard in place prior to 2023 ($45\% \times 0.12 \text{ ppm} = 0.054 \text{ ppm}$). Even with the reduction in the nitrogen dioxide 1-hour standard to 0.08 ppm in 2023, the Queensland centres listed above can still be considered to comply with the lower nitrogen dioxide acceptance limit of 0.036 ppm.

Nitrogen dioxide monitoring in Townsville (Pimlico from 2004 to 2016 and North Ward between 2018 and 2025) showed that concentrations were consistently less than 45 per cent of the relevant AAQ NEPM standards. Across the 20 years of monitoring in Townsville, there has only been ten discrete hours in total (0.008 per cent) when the one-hour average nitrogen dioxide concentration has exceeded 0.036 ppm; and one-hour average nitrogen dioxide concentrations have never exceeded 0.042 ppm (53 per cent of the standard). The highest annual average nitrogen dioxide concentration during this period was 0.010 ppm (67 per cent of the standard). On this basis, it can be reasonably expected that nitrogen dioxide levels will comply with the AAQ NEPM standards in the Queensland centres of Bundaberg, Cairns, Mackay, Maryborough/Hervey Bay and Mount Isa, and nitrogen dioxide monitoring is not required.

Campaign monitoring from 2006 to 2010 established that nitrogen dioxide concentrations at North Toowoomba were consistently less than 60 per cent of the AAQ NEPM standards adopted from 2021, satisfying the acceptance limit specified in screening procedure A in Table 1 of the AAQ NEPM Technical Paper No. 4.

Ozone

Table 5. 2025 ozone compliance summary

Region/ performance monitoring station	Data availability rates (% of hours)					Number of exceedances (days)	Performance against the standards and goals
	Q1	Q2	Q3	Q4	Annual		8-hour
South East Queensland							
North Coast sub-region							
Mountain Creek	99.7	99.4	97.0	99.7	99.0	0	met
Brisbane sub-region							
Deception Bay	98.1	95.3	91.5	99.7	96.2	0	met
Rocklea	96.9	98.1	99.4	96.9	97.8	0	met
Springwood	96.1	99.5	99.7	100.0	98.8	0	met
Gold Coast sub-region							
Southport	98.4	97.0	98.1	98.7	98.1	0	met
Ipswich sub-region							
Raceview	97.5	100.0	97.6	97.3	98.1	1 (1*)	met
Rockhampton							
West Rockhampton	0.0	0.0	14.3	98.8	28.5	0	ND
* Exceedance due to bushfire smoke impacts (exceptional event). Excluded from determination of compliance with the 1-day goal.							
ND = “not demonstrated” due to insufficient data in one or more quarters.							
AAQ NEPM standard for O ₃ : 0.065 ppm (8-hour average).							
AAQ NEPM goal for O ₃ : standard not to be exceeded.							

Regions which do not require monitoring on the basis of screening arguments that ozone levels are reasonably expected to be consistently below the NEPM standards are:

- Gladstone
- Toowoomba
- Townsville.

Measured 8-hour average ozone concentrations at Targinie in the Gladstone region from mid-2001 to mid-2006 were consistently less than 75 per cent of the new AAQ NEPM standard. The Targinie campaign GRUB monitoring station was located 20 kilometres north-west of Gladstone and downwind of the region's major industrial and transport sources. This campaign monitoring established that ozone concentrations satisfied screening procedure A in Table 2 of the AAQ NEPM Technical Paper No. 4 and, in the absence of any significant increase in ozone precursor pollutant emissions, further ozone monitoring is not required in the Gladstone region.

The maximum 8-hour average ozone concentration recorded during campaign monitoring at North Toowoomba between July 2003 and December 2010 was 0.058 ppm, or 89 per cent of the AAQ NEPM standard. During this period, ozone 8-hour average concentrations only exceeded 0.049 ppm (75 per cent of the AAQ NEPM 8-hour standard) on one to two days per year on average, with most days linked with exceptional regional events (bushfire smoke episodes during spring and summer). Emissions of ozone precursor pollutants from industrial, commercial and residential sources rarely resulted in 8-hour ozone concentrations above 0.049

ppm. While not fully satisfying screening procedure A in Table 2 of the AAQ NEPM Technical Paper No. 4, in the absence of any significant increase in ozone precursor pollutants⁷ it is considered that ozone levels in Toowoomba can be reasonably expected to remain below the AAQ NEPM standard.

No exceedances of the AAQ NEPM 8-hour ozone standard were recorded at the Pimlico campaign monitoring site in Townsville between 2004 and 2016. Ozone levels exceeded 75 per cent of the AAQ NEPM 8-hour standard on only six days during this 14-year period (one day in 2008 and five days in 2011), with the elevated ozone levels largely correlating with the presence of bushfires in the region. While not fully satisfying screening procedure A in Table 2 of the AAQ NEPM Technical Paper No. 4, given ozone precursor pollutant emissions are now significantly less than in 2016⁸ due to decreased industrial activity in the region, it is considered that ozone levels in Townsville can be reasonably expected to remain below the AAQ NEPM standard.

As no monitoring has been carried out to date, performance against the 8-hour ozone standard adopted in 2021 is currently 'not demonstrated' for the following regions:

- Bundaberg
- Cairns
- Mackay
- Maryborough/Hervey Bay
- Mount Isa.

Previous screening exclusions for coastal centres with a population below 62,000 and inland centres with a population below 25,000 based on generic modelling conducted by CSIRO documented in Appendix 1 of the AAQ NEPM Technical Paper No. 4 do not cover the new AAQ NEPM ozone 8-hour standard adopted in 2021. Previous conclusions that ozone monitoring is not required in the coastal Queensland centres of Bundaberg, Mackay and Maryborough/Hervey Bay, and the inland centre of Mount Isa, require further generic modelling to determine their continued validity.

With maximum 8-hour average ozone concentrations in Gladstone and Townsville exceeding the 60 per cent acceptance limit specified in screening procedure F in Table 2 of AAQ NEPM Technical Paper No. 4, previous exclusions of the need for ozone monitoring in Cairns on this basis are no longer valid.

⁷ National Pollutant Inventory reporting for industrial facilities in the Toowoomba region in 2024–25 compared to 2010–11 shows that while emissions of oxides of nitrogen have increased from 36 tonnes to 98 tonnes, emissions of volatile organic compounds have reduced significantly (64 tonnes compared to 14 tonnes, data obtained from www.npi.gov.au).

⁸ Following the closure of a major metals processing facility in 2016, National Pollutant Inventory reporting for industrial facilities in the Townsville region for 2024–25 compared to 2015–16 show a marked reduction in emissions of oxides of nitrogen (260 tonnes compared to 3500 tonnes) and a small decrease in emissions of volatile organic compounds from 280 tonnes to 230 tonnes (data obtained from www.npi.gov.au).

Sulfur dioxide

Table 6. 2025 SO₂ compliance summary

Region/ performance monitoring station	Data availability rates (% of hours)					Number of exceedances (days)		Performance against the standards and goals	
	Q1	Q2	Q3	Q4	Annual	1-hour	1-day	1-hour	1-day
South East Queensland									
<i>Brisbane sub-region</i>									
Springwood	98.9	99.4	99.8	98.1	99.0	0	0	met	met
<i>Ipswich sub-region</i>									
Raceview	94.6	99.7	97.2	97.3	97.1	0	0	met	met
Gladstone									
South Gladstone	99.5	99.6	99.0	98.6	99.1	0	0	met	met
Rockhampton									
West Rockhampton	0.0	0.0	14.6	99.2	28.7	0	0	ND	ND
Townsville									
North Ward	98.9	99.2	99.6	97.3	98.7	0	0	met	met
Mount Isa									
The Gap	98.9	99.6	96.9	99.1	98.5	39	11	not met	not met
ND = "not demonstrated" due to insufficient data in one or more quarters.									
AAQ NEPM standards for SO ₂ : 0.075 ppm (1-hour average); 0.02 ppm (1-day average).									
AAQ NEPM goal for SO ₂ : standards not to be exceeded.									

Regions which do not require monitoring on the basis of screening arguments that sulfur dioxide levels are reasonably expected to be consistently below the AAQ NEPM standards are:

- Bundaberg
- Cairns
- Mackay
- Maryborough/Hervey Bay
- Toowoomba.

Ambient concentrations of sulfur dioxide are typically low unless significant industrial sources of sulfur dioxide are present (such as coal-fired power stations or metals smelting). Peak sulfur dioxide concentrations in South East Queensland have been less than 40 per cent of the AAQ NEPM 1-hour and 1-day standards adopted in 2025 and 2021 respectively since 2010 and have never exceeded these levels in Townsville from 2005 when monitoring commenced. Under screening procedure F in Table 1 of the AAQ NEPM Technical Paper No. 4, sulfur dioxide monitoring is not required in other Queensland centres with lower population and no significant sulfur dioxide point sources.

PM₁₀Table 7. 2025 PM₁₀ compliance summary

Region/ performance monitoring station	Data availability rates (% of hours)					Number of exceedances (days)	Annual average (µg/m³)	Performance against the standards and goals	
	Q1	Q2	Q3	Q4	Annual			1-day	1-year
South East Queensland									
North Coast sub-region									
Mountain Creek	93.2	99.5	99.7	99.5	98.0	0	14.0	met	met
Brisbane sub-region									
Rocklea	97.1	99.5	99.8	97.0	98.4	1 (1*)	17.3	met	met
Springwood	97.9	99.6	99.8	99.6	99.2	0	14.6	met	met
Gold Coast sub-region									
Southport	93.1	98.4	99.0	99.5	97.6	0	14.3	met	met
Ipswich sub-region									
Raceview	93.6	99.7	98.0	98.6	97.5	4 (2*)	20.4	not met	met
Toowoomba									
Toowoomba	97.4	99.0	97.9	99.6	98.5	0	12.0	met	met
Maryborough – Hervey Bay									
Maryborough	97.5	99.6	99.9	99.9	99.2	0	14.0	met	met
Gladstone									
South Gladstone	99.7	99.6	99.7	99.5	99.6	1 (1*)	16	met	met
Rockhampton									
West Rockhampton	0.0	0.0	14.6	99.9	28.9	1 (1*)	i.d.	ND	ND
Mackay									
West Mackay	99.1	99.8	99.3	99.3	99.3	2 (2*)	17.9	met	met
Townsville									
North Ward	99.4	99.2	99.6	98.8	99.2	1 (1*)	15.6	met	met
Cairns									
Woree	99.7	99.2	100.0	99.6	99.6	4	18.6	not met	met
Mount Isa									
The Gap	99.3	99.7	99.0	77.2	93.8	1 (1**)	14.0	met	met
ND = “not demonstrated” due to insufficient data in one or more quarters. i.d. = insufficient data to calculate an annual average value. * Exceedance due to smoke (exceptional event). Excluded from determination of compliance with the 1-day goal. ** Exceedance due to region-wide windblown dust (exceptional event). Excluded from determination of compliance with the 1-day goal. AAQ NEPM standards for PM ₁₀ : 50 µg/m³ (1-day average); 25 µg/m³ (1-year average). AAQ NEPM goal for PM ₁₀ : standard not to be exceeded. When reporting compliance with the PM _{2.5} 1-day goal, PM _{2.5} monitoring data determined to be directly associated with an exceptional event (e.g. bushfire smoke, dust storm) is excluded.									

PM₁₀ monitoring is required in all regions because screening procedure arguments that pollutant concentrations are reasonably expected to be consistently below the relevant AAQ NEPM standard are not satisfied.

As no monitoring has been carried out to date, performance is 'not demonstrated' for the following regions:

- Bundaberg

PM_{2.5}

Table 8. 2025 PM_{2.5} compliance summary

Region/ performance monitoring station	Data availability rates (% of hours)					Number of exceedances (days)	Annual average (µg/m³)	Performance against the standards and goals	
	Q1	Q2	Q3	Q4	Annual			1-day	1-year
South East Queensland									
North Coast sub-region									
Mountain Creek	93.2	99.5	99.7	99.5	98.0	0	5.0	met	met
Brisbane sub-region									
Rocklea	97.1	99.5	99.8	97.0	98.4	0	6.5	met	met
Springwood	97.9	99.6	99.8	99.6	99.2	1 (1*)	5.3	met	met
Gold Coast sub-region									
Southport	93.1	98.4	99.0	99.5	97.6	1 (1*)	4.9	met	met
Ipswich sub-region									
Raceview	93.6	99.7	98.0	98.6	97.5	2 (2*)	6.8	met	met
Toowoomba									
Toowoomba	97.4	99.0	97.9	99.6	98.5	3 (3*)	4.9	met	met
Maryborough – Hervey Bay									
Maryborough	97.5	99.6	99.9	99.9	99.2	3 (3*)	5.5	met	met
Gladstone									
South Gladstone	99.7	99.6	99.7	99.5	99.6	2 (2*)	5.3	met	met
Rockhampton									
West Rockhampton	0.0	0.0	14.6	99.9	28.9	1 (1*)	i.d.	ND	ND
Mackay									
West Mackay	99.1	99.8	99.3	99.3	99.3	3 (2*)	6.6	not met	met
Townsville									
North Ward	99.4	99.2	99.6	98.8	99.2	3 (3*)	6.0	met	met
Cairns									
Woree	99.7	99.2	100.0	99.6	99.6	3 (3*)	5.6	met	met
Mount Isa									
The Gap	99.3	99.7	99.0	77.2	93.8	2 (2*)	5.0	met	met
ND = “not demonstrated” due to insufficient data in one or more quarters. i.d. = insufficient data to calculate an annual average value. * Exceedance due to bushfire smoke (exceptional event). Excluded from determination of compliance with the 1-day goal. AAQ NEPM standards for PM _{2.5} : 20 µg/m³ (1-day average); 7 µg/m³ (1-year average). AAQ NEPM goal for PM _{2.5} : standard not to be exceeded. When reporting compliance with the PM _{2.5} 1-day goal, PM _{2.5} monitoring data determined to be directly associated with an exceptional event (e.g. bushfire smoke, dust storm) is excluded.									

PM_{2.5} monitoring is required in all regions because screening procedure arguments that pollutant concentrations are reasonably expected to be consistently below the relevant AAQ NEPM advisory standard are not satisfied.

As no monitoring has been carried out to date, performance is 'not demonstrated' for the following regions:

- Bundaberg

Lead

Table 9. 2025 Lead compliance summary

Region/ performance monitoring station	Data availability rates (% of hours)					Annual average (µg/m³)	Performance against the standard and goal
	Q1	Q2	Q3	Q4	Annual		1-year
Townsville							
North Ward	100.0	100.0	100.0	100.0	100.0	0.01	met
Mount Isa							
The Gap	86.7	80.0	87.5	93.3	96.4	0.11	met
AAQ NEPM standard for lead: 0.5 µg/m³ (1-year average). AAQ NEPM goal for lead: standard not to be exceeded.							

Regions which do not require monitoring on the basis of screening arguments that lead levels are reasonably expected to be consistently below the NEPM standard are:

- Bundaberg
- Cairns
- Gladstone
- Mackay
- Maryborough/Hervey Bay
- Rockhampton
- South East Queensland
- Toowoomba.

The phase-out of leaded motor vehicle fuel from March 2001 means that no significant sources of lead now exist in most Queensland regions. The exceptions to this are non-vehicle sources of lead such as metals smelting and handling of metal ore concentrates.

Lead concentrations measured at the Woolloongabba performance monitoring station in South East Queensland were less than ten per cent of the AAQ NEPM standard for both 2001 (0.03 µg/m³) and 2002 (0.02 µg/m³). These measurements demonstrate that compliance with the AAQ NEPM standard and goal has been achieved in South East Queensland, in accordance with the *National Environment Protection (Ambient Air Quality) Measure Technical Paper No. 9, Lead Monitoring*⁹. Lead monitoring in South East Queensland ceased in 2002.

Peak lead concentrations in South East Queensland were less than 40 per cent of the AAQ NEPM standard between 1999 and 2002 (see Section D – Pollutant distribution and trends). This means

⁹ available from www.nepc.gov.au/resource/ephc-archive-ambient-air-quality-nepm

that, under screening procedure F in Table 1 of the AAQ NEPM Technical Paper No. 4, lead monitoring is not required in other Queensland centres with lower population and traffic density, with the exception of Townsville and Mount Isa where other non-vehicle lead emission sources exist.

Section C – Analysis of monitoring data against standards

Exceedance summary

This section presents time, date and location information for the following annual summary statistics for 2025:

- exceedances of AAQ NEPM standards and circumstances under which they occurred;
- annual maximum and second-highest daily concentrations for carbon monoxide, nitrogen dioxide, ozone, sulfur dioxide, PM₁₀ and PM_{2.5}.

Exceedance details are presented in Tables 10 to 13 and summary statistics are presented in Tables 14 to 20. Concentrations exceeding AAQ NEPM standards are shown in bold text in the summary tables.

Exceedance summary

In 2025, exceedances of AAQ NEPM standards at compliance monitoring sites in Queensland included ozone in South East Queensland; sulfur dioxide in Mount Isa; PM₁₀ in South East Queensland, Toowoomba, Maryborough, Gladstone, Mackay, Townsville, Cairns and Mount Isa; and PM_{2.5} in South East Queensland, Toowoomba, Maryborough, Gladstone, Mackay, Townsville, Cairns and Mount Isa.

Ozone Exceedances

Ozone concentrations at the Raceview monitoring site in South East Queensland exceeded the AAQ NEPM 8-hour standard on one day due to the presence of added ozone precursor pollutant emissions from a bushfire at Ripley during meteorological conditions conducive to ozone formation. Details of the 2025 ozone exceedance are summarised in Table 10.

Sulfur Dioxide Exceedances

Industrial operations (metals smelting and sulfuric acid manufacture) emit sulfur dioxide into the atmosphere in Mount Isa. Prior to April 2012 smelter operations were controlled to meet *Mount Isa Mines Agreement Act 1985* (MIM Act) air quality limits. From April 2012 to December 2015, smelter operations were under a Transitional Environmental Program (TEP) that set out a staged program of works to achieve compliance with the air quality objectives contained in the then *Queensland Environmental Protection (Air) Policy 2008* (now the *Queensland Environmental Protection (Air) Policy 2019* and equivalent to the AAQ NEPM standards for sulfur dioxide in force at that time). Since January 2016 smelter operations have been operating under an Environmental Authority (EA) (further amended in 2022) which sets alternative air quality limits for some air pollutants, including sulfur dioxide, as part of the Copper Smelter Extension Project. As smelter operations were only controlled to meet EA limit values, ambient sulfur dioxide concentrations at The Gap monitoring site exceeded the more stringent AAQ NEPM 1-hour and 1-day standards on 39 and 11 days respectively during 2025. A listing of these exceedances is provided in Table 11.

PM₁₀ Exceedances

Air quality monitoring across Queensland identified 15 exceedances of the AAQ NEPM 1-day PM₁₀ at compliance monitoring stations during the 2025 reporting period. These exceedances were attributed to a range of natural and human-induced factors, as outlined below:

South East Queensland: The Rocklea monitoring site recorded one exceedance, which was due to a combination of particle emissions from bushfires and hazard-reduction burns. The Raceview monitoring site recorded four exceedances, attributed to smoke from a bushfire at Ripley on two days and windblown dust generated by activities at a nearby commercial facility on the other two days.

Gladstone: The South Gladstone monitoring site recorded one exceedance when smoke from a number of hazard-reduction burns around Rodds Bay (including a planned burn in Eurimbula National Park) was transported over the Gladstone region by southerly winds.

Rockhampton: The West Rockhampton monitoring site recorded one exceedance when smoke from large-scale bushfires in the Canal Creek and Byfield area north-east of Rockhampton was transported over the Rockhampton region.

Mackay: The West Mackay monitoring site recorded two exceedances due to smoke transported by southerly winds from multiple large bushfires in the coastal ranges between Clairview and Sarina.

Townsville: The North Ward monitoring site recorded one exceedance resulting from smoke from vegetation fires in the Townsville area and further west.

Cairns: The Woree monitoring site recorded four exceedances. All exceedances were primarily caused by windblown dust generated by earthworks at a housing estate development adjacent to the monitoring station, although smoke from hazard-reduction burns would have contributed to some extent on two of these days.

Mount Isa: The Gap monitoring site recorded one exceedance, primarily due to region-wide windblown dust generated by gusty winds accompanying the passage of a weather trough. The wind change also transported smoke from a vegetation fire south of Mount Isa across the monitoring location.

Details of the 2025 PM₁₀ exceedance are summarised in Table 12.

PM_{2.5} Exceedances

Air quality monitoring across Queensland identified 24 exceedances of the AAQ NEPM 1-day PM_{2.5} standard at compliance monitoring stations during the 2025 reporting period. These exceedances were attributed to a range of natural and human-induced factors, as outlined below:

South East Queensland: A total of four exceedances were recorded in this region, one at Springwood, one at Southport, and two at Raceview. All exceedances were caused by smoke from vegetation fires.

Toowoomba: The Toowoomba monitoring site recorded three exceedances, all linked to smoke from multiple bushfires and vegetation fires in the greater South East Queensland region.

Maryborough: The Maryborough monitoring site recorded three exceedances. Smoke from a hazard-reduction burn in nearby pine plantations was responsible for one exceedance, while the other two exceedances resulted from bushfire smoke.

Gladstone: The South Gladstone monitoring site recorded two exceedances, one attributed to smoke from a hazard-reduction burn and the other to bushfire smoke.

Rockhampton: The West Rockhampton monitoring site recorded one exceedance due to smoke from large-scale bushfires in the Canal Creek and Byfield area north-east of Rockhampton.

Mackay: The West Mackay monitoring site recorded three exceedances, two resulting from smoke generated by multiple bushfires in coastal ranges south of Mackay and the third from smoke from burning of sugarcane prior to harvesting in the Pioneer Valley.

Townsville Region: The North Ward monitoring site recorded three exceedances, all attributed to smoke from bushfires in the Townsville area.

Cairns Region: The Woree monitoring site recorded three exceedances, all the result of smoke from an extensive hazard-reduction burn in Little Mulgrave National Park, south of Cairns.

Mount Isa Region: The Gap monitoring site recorded two exceedances, both of which were caused by smoke from bushfires.

Details of the 2025 PM_{2.5} exceedance are summarised in Table 13.

Table 10. 2025 Ozone exceedances

Region/performance monitoring station	Standard	Concentration (ppm)	Date	Time	Circumstances
South East Queensland					
<i>Ipswich sub-region</i>					
Raceview	8-hour	0.066	Oct 07	16	Added ozone precursor pollutant emissions from a bushfire at Ripley during meteorological conditions conducive to ozone formation
AAQ NEPM standard for O ₃ : 0.065 ppm (8-hour average). AAQ NEPM goal for O ₃ : standard not to be exceeded.					

Table 11. 2025 SO₂ exceedances

Region/performance monitoring station	Standard	Concentration (µg/m ³)	Date	Time	Circumstances
Mount Isa					
The Gap	1-hour	0.607	Dec 06	8	All exceedances at The Gap monitoring site were due to industry emissions
		0.384	Mar 29	11	
		0.357	Oct 30	12	
		0.345	Dec 06	9	
		0.333	Mar 27	12	
		0.306	Oct 10	8	
		0.302	Dec 09	9	
		0.278	Mar 04	9	
		0.277	Oct 10	9	
		0.275	Mar 12	9	
		0.249	Dec 09	10	
		0.248	Nov 06	12	
		0.211	Aug 27	10	
		0.188	Oct 30	11	
		0.181	Nov 23	10	
		0.159	Oct 12	16	
		0.158	Jun 01	17	
		0.147	Nov 22	9	
		0.145	Mar 12	8	
		0.143	Dec 08	4	
		0.140	Aug 29	15	
		0.134	Aug 27	9	
		0.132	Oct 22	10	
		0.123	Oct 10	7	
		0.120	Nov 08	11	
		0.119	Mar 28	15	
		0.118	Jan 24	7	
		0.118	Mar 03	8	
		0.117	Jul 09	12	
		0.115	Sep 30	19	
		0.114	Mar 04	10	
		0.109	Mar 29	12	
		0.108	Mar 27	16	
		0.105	Sep 30	18	
		0.103	Jan 22	8	
		0.103	Oct 22	11	
		0.097	Jan 24	5	
		0.096	Dec 08	5	
		0.095	Mar 07	9	

		0.094	Mar 26	9				
		0.093	Mar 28	13				
		0.090	Aug 22	12				
		0.089	Jan 23	8				
		0.089	Mar 31	12				
		0.089	Sep 27	17				
		0.087	Jun 01	16				
		0.087	Nov 25	3				
		0.086	Jan 24	8				
		0.085	Jan 09	10				
		0.084	Jan 05	9				
		0.082	Jul 29	12				
		0.082	Dec 06	10				
		0.080	Jan 15	0				
		0.080	Nov 24	7				
		0.078	Jan 09	11				
		0.078	Jan 10	6				
		0.077	Jul 26	0				
		0.076	Jan 23	7				
		0.076	Aug 04	15				
		The Gap	1-day	0.053		Dec 06	24	All exceedances at The Gap monitoring site were due to industry emissions
				0.041		Oct 10	24	
				0.031		Mar 29	24	
				0.028		Mar 27	24	
0.028	Mar 04			24				
0.028	Mar 12			24				
0.027	Oct 22			24				
0.026	Jan 24			24				
0.025	Dec 09			24				
0.025	Oct 30			24				
0.022	Jun 01			24				

AAQ NEPM standards for SO₂: 0.075 ppm (1-hour average); 0.02 ppm (1-day average).
AAQ NEPM goal for SO₂: standards not to be exceeded.

Table 12. 2025 PM₁₀ exceedances

Region/performance monitoring station	Standard	Concentration (µg/m³)	Date	Time	Circumstances
South East Queensland					
Brisbane sub-region					
Rocklea	1-day	50.3	Oct 24	24	Smoke from bushfires and hazard-reduction burns
Raceview	1-day	69.1	Oct 07	24	Bushfire smoke
		52.9	Sep 18	24	Windblown dust from activities taking place at nearby commercial facilities
		52.8	Oct 08	24	Bushfire smoke
		50.1	Oct 14	24	Windblown dust generated by activities at a nearby commercial facility
Gladstone					
South Gladstone	1-day	92.2	Apr 30	24	Hazard-reduction burn smoke
Rockhampton					
West Rockhampton	1-day	60.4	Oct 02	24	Bushfire smoke
Mackay					
West Mackay	1-day	53.5	Oct 04	24	Bushfire smoke
		50.2	Oct 03	24	
Townsville					
North Ward	1-day	57.0	Nov 04	24	Bushfire smoke
Cairns					
Woree	1-day	64.4	Oct 04	24	Windblown dust from housing estate earthworks (some contribution from smoke from a hazard-reduction burn on 3 and 4 October)
		58.8	Sep 26	24	
		51.8	Oct 08	24	
		50.3	Oct 03	24	
Mount Isa					
The Gap	1-day	54.9	Oct 22	24	Region-wide windblown dust combined with bushfire smoke
AAQ NEPM standards for PM ₁₀ : 50 µg/m³ (1-day average); 25 µg/m³ (1-year average). AAQ NEPM goal for PM ₁₀ : standards not to be exceeded. When reporting compliance with the PM ₁₀ 1-day goal, PM ₁₀ monitoring data determined to be directly associated with an exceptional event (e.g. bushfire smoke, authorised hazard-reduction burn smoke, dust storm) is excluded.					

Table 13. 2025 PM_{2.5} exceedances

Region/performance monitoring station	Standard	Concentration (µg/m³)	Date	Time	Circumstances
South East Queensland					
Brisbane sub-region					
Springwood	1-day	21.9	Oct 27	24	Bushfire smoke
Gold Coast sub-region					
Southport	1-day	21.0	Oct 27	24	Bushfire smoke
Ipswich sub-region					
Raceview	1-day	24.8	Oct 27	24	Bushfire smoke
		24.4	Oct 07	24	
Toowoomba					
Toowoomba	1-day	31.2	Oct 07	24	Bushfire smoke
		29.4	Sep 27	24	Hazard-reduction burn smoke
		23.9	Jan 29	24	Bushfire smoke
Maryborough – Hervey Bay					
Maryborough	1-day	29.7	Sep 25	24	Bushfire smoke
		23.9	Nov 09	24	Bushfire smoke
		20.2	May 22	24	Hazard-reduction burn smoke
Gladstone					
South Gladstone	1-day	65.0	Apr 30	24	Hazard-reduction burn smoke
		31.6	Oct 02	24	Bushfire smoke
Rockhampton					
West Rockhampton	1-day	49.5	Oct 02	24	Bushfire smoke
Mackay					
West Mackay	1-day	33.4	Oct 04	24	Bushfire smoke
		26.9	Oct 03	24	
		23.8	Sep 25	24	
Townsville					
North Ward	1-day	25.0	Sep 11	24	Bushfire smoke
		24.6	Sep 26	24	
		22.7	Oct 04	24	
Cairns					
Woree	1-day	31.0	Oct 03	24	Hazard-reduction burn smoke
		26.8	Oct 04	24	
		24.2	Oct 01	24	
Mount Isa					
The Gap	1-day	30.2	Oct 22	24	Bushfire smoke
		22.1	Jan 05	24	
AAQ NEPM standards for PM _{2.5} : 20 µg/m³ (1-day average); 7 µg/m³ (1-year average). AAQ NEPM goal for PM _{2.5} : standards not to be exceeded. When reporting compliance with the PM _{2.5} 1-day goal, PM _{2.5} monitoring data determined to be directly associated with an exceptional event (e.g. bushfire smoke, authorised hazard-reduction burn smoke, dust storm) is excluded.					

Summaries of maximum and second-highest pollutant concentrations

Table 14 to Table 20 present daily peak and second-highest concentrations, and the time and date on which these occurred, for all AAQ NEPM pollutants and monitoring sites for 2025.

Table 14. 2025 summary statistics for daily peak 8-hour average CO concentrations

Region/performance monitoring station	Number of valid days	Highest (ppm)	Highest (date:hour)	2 nd highest (ppm)	2 nd highest (date:hour)
<u>South East Queensland</u>					
Woolloongabba	363	0.97	Jul 15:23	0.96	Jul 16:00
<u>Gladstone</u>					
Boyne Island	335	0.96	Apr 30:07	0.46	Nov 09:06
• AAQ NEPM standard for CO: 9.0 ppm (8-hour average). • AAQ NEPM goal for CO: standard not to be exceeded.					

Table 15. 2025 summary statistics for daily peak 1-hour average NO₂ concentrations

Region/performance monitoring station	Number of valid days	Highest (ppm)	Highest (date:hour)	2 nd highest (ppm)	2 nd highest (date:hour)
<u>South East Queensland</u>					
<i>North Coast sub-region</i>					
Mountain Creek	354	0.028	Jul 15:18	0.027	Jul 14:06
<i>Brisbane sub-region</i>					
Deception Bay	362	0.036	May 23:18	0.033	Jun 16:18
Rocklea	357	0.040	Jul 15:19	0.039	Jul 14:19
Springwood	364	0.033	Jul 14:23	0.031	Jun 17:17
<i>Gold Coast sub-region</i>					
Southport	359	0.035	Jul 14:18	0.033	Sep 24:20 Sep 25:20
<i>Ipswich sub-region</i>					
Raceview	358	0.038	Jun 16:16 Jun 26:17		
<u>Gladstone</u>					
South Gladstone	365	0.037	Aug 07:15	0.032	Jul 14:06
<u>Rockhampton</u>					
West Rockhampton	104	0.020	Oct 27:20	0.016	Nov 17:19
<u>Townsville</u>					
North Ward	365	0.026	Sep 11:21	0.023	Jul 04:07
• AAQ NEPM standard for NO₂: 0.080 ppm (1-hour average). • AAQ NEPM goal for NO₂: standards not to be exceeded.					

Table 16. 2025 summary statistics for daily peak 8-hour average O₃ concentrations

Region/performance monitoring station	Number of valid days	Highest (ppm)	Highest (date:hour)	2 nd highest (ppm)	2 nd highest (date:hour)
South East Queensland					
<i>North Coast sub-region</i>					
Mountain Creek	356	0.047	Nov 02:12	0.044	Oct 25:00
<i>Brisbane sub-region</i>					
Deception Bay	362	0.052	Sep 21:17 Sep 20:18 Nov 14:17		
Rocklea	363	0.061	Sep 01:15	0.051	Nov 01:16
Springwood	364	0.056	Nov 01:16	0.055	Nov 14:17
<i>Gold Coast sub-region</i>					
Southport	359	0.048	Sep 09:18	0.047	Aug 25:17
<i>Ipswich sub-region</i>					
Raceview	355	0.066	Oct 7:16	0.057	Sep 26:17
Rockhampton					
West Rockhampton	102	0.053	Sep 29:16	0.049	Nov 10:16
Bold text indicates a value greater than the AAQ NEPM standard. AAQ NEPM standard for O₃: 0.065 ppm (8-hour average). AAQ NEPM goal for O₃: standard not to be exceeded.					

Table 17. 2025 summary statistics for daily peak 1-hour average SO₂ concentrations

Region/performance monitoring station	Number of valid days	Highest (ppm)	Highest (date:hour)	2 nd highest (ppm)	2 nd highest (date:hour)
<u>South East Queensland</u>					
<i>Brisbane sub-region</i>					
Springwood	362	0.005	Sep 09:18 Oct 06:19 Oct 11:21		
<i>Ipswich sub-region</i>					
Raceview	350	0.005	May 26:16	0.004	Oct 03:15
<u>Gladstone</u>					
South Gladstone	362	0.068	Sep 7:15	0.058	Feb 23:16
<u>Rockhampton</u>					
West Rockhampton	104	0.005	Oct 27:20 Nov 05:09 Nov 05:10		
<u>Townsville</u>					
North Ward	361	0.013	Jun 05:23	0.005	Feb 24:17
<u>Mount Isa</u>					
The Gap	361	0.607	Dec 06:08	0.384	Mar 29:11
Bold text indicates a value greater than the AAQ NEPM standard. AAQ NEPM standard for SO₂: 0.075 ppm (1-hour average). AAQ NEPM goal for SO₂: standard not to be exceeded.					

Table 18. 2025 summary statistics for daily 1-day average SO₂ concentrations

Region/performance monitoring station	Number of valid days	Highest (ppm)	Highest (date)	2 nd highest (ppm)	2 nd highest (date)
<u>South East Queensland</u>					
<i>Brisbane sub-region</i>					
Springwood	362	0.001	76 days in total		
<i>Ipswich sub-region</i>					
Raceview	350	0.001	99 days in total		
<u>Gladstone</u>					
South Gladstone	362	0.013	Sep 07	0.011	Oct 16
<u>Rockhampton</u>					
West Rockhampton	105	0.001	16 days in total		
<u>Townsville</u>					
North Ward	361	0.001	24 days in total		
<u>Mount Isa</u>					
The Gap	361	0.053	Dec 06	0.041	Oct 10
Bold text indicates a value greater than the AAQ NEPM standard. AAQ NEPM standard for SO ₂ : 0.020 ppm (1-day average). AAQ NEPM goal for SO ₂ : standard not to be exceeded.					

Table 19. 2025 summary statistics for daily 1-day average PM₁₀ concentrations

Region/performance monitoring station	Number of valid days	Highest (µg/m ³)	Highest (date)	2 nd highest (µg/m ³)	2 nd highest (date)
<u>South East Queensland</u>					
<i>North Coast sub-region</i>					
Mountain Creek	358	42.0	Oct 24	30.7	Dec 16
<i>Brisbane sub-region</i>					
Rocklea [†]	359	50.3	Oct 24	47.3	Sep 25
Springwood	362	45.0	Oct 24	38.3	Oct 27
<i>Gold Coast sub-region</i>					
Southport	355	47.7	Oct 24	40.5	Oct 27
<i>Ipswich sub-region</i>					
Raceview	355	69.1	Oct 07	52.9	Sep 18
<u>Toowoomba</u>					
Toowoomba	357	45.3	Oct 07	40.4	Sep 27
<u>Maryborough – Hervey Bay</u>					
Maryborough	362	41.3	Sep 25	33.8	Aug 30
<u>Gladstone</u>					
South Gladstone	365	92.2	Apr 30	43.3	Feb 21
<u>Rockhampton</u>					
West Rockhampton	105	60.4	Oct 02	30.1	Oct 13
<u>Mackay</u>					
West Mackay	363	53.5	Oct 04	50.2	Oct 03
<u>Townsville</u>					
North Ward	365	57.0	Nov 04	44.6	Dec 03
<u>Cairns</u>					
Woree	364	64.4	Oct 04	58.8	Sep 26
<u>Mount Isa</u>					
The Gap	342	54.9	Oct 22	36.8	Jul 25
Bold text indicates a value greater than the AAQ NEPM standard. [†] Monitoring was conducted using TEOM Model 1405DF instrumentation fitted with FDMS until 19 May 2025, and a Teledyne API Model T640X monitor thereafter. AAQ NEPM standard for PM₁₀: 50 µg/m³ (1-day average). AAQ NEPM goal for PM₁₀: standard not to be exceeded (excluding exceptional events).					

Table 20. 2025 summary statistics for daily 1-day average PM_{2.5} concentrations

Region/performance monitoring station	Number of valid days	Highest (µg/m ³)	Highest (date)	2 nd highest (µg/m ³)	2 nd highest (date)
<u>South East Queensland</u>					
<i><u>North Coast sub-region</u></i>					
Mountain Creek	358	13.8	Nov 09	13.3	Oct 24
<i><u>Brisbane sub-region</u></i>					
Rocklea [†]	359	19.4	Oct 27	17.5	Oct 07
Springwood	362	21.9	Oct 27	16.1	Sep 26
<i><u>Gold Coast sub-region</u></i>					
Southport	355	21.0	Oct 27	17.2	Sep 26
<i><u>Ipswich sub-region</u></i>					
Raceview	355	24.8	Oct 27	24.4	Oct 07
<u>Toowoomba</u>					
Toowoomba	357	31.2	Oct 07	29.4	Sep 27
<u>Maryborough – Hervey Bay</u>					
Maryborough	362	29.7	Sep 25	23.9	Nov 9
<u>Gladstone</u>					
South Gladstone	365	65.0	Apr 30	31.6	Oct 02
<u>Rockhampton</u>					
West Rockhampton	105	49.5	Oct 02	17.1	Sep 21
<u>Mackay</u>					
West Mackay	263	33.4	Oct 04	26.9	Oct 03
<u>Townsville</u>					
North Ward	365	25.0	Sep 11	24.6	Sep 26
<u>Cairns</u>					
Woree	364	31.0	Oct 03	26.8	Oct 04
<u>Mount Isa</u>					
The Gap	342	30.2	Oct 22	22.1	Jan 05
Bold text indicates a value greater than the AAQ NEPM standard. [†] Monitoring was conducted using TEOM Model 1405DF instrumentation fitted with FDMS until 19 May 2025, and a Teledyne API Model AAQ NEPM standard for PM_{2.5}: 20 µg/m³ (1-day average). AAQ NEPM goal for PM_{2.5}: standard not to be exceeded (excluding exceptional events).					

Section D – Pollutant distribution and trends

This section presents results of further analysis of the monitoring data. Percentiles of 2025 daily peak concentrations are presented for each monitoring station and pollutant. Daily peak concentrations were only included in this analysis if at least 75 per cent of the daily data were valid. Percentiles for eight-hour average carbon monoxide and eight-hour average ozone were calculated based on daily peak concentrations. Daily peak concentrations were calculated from running hourly values, including those that overlap from one calendar day to the next. Concentrations exceeding the corresponding AAQ NEPM standard are shown in bold text.

The tables in this section also present annual statistics for all trend monitoring stations identified in the Queensland AAQ NEPM monitoring plan. For regions and sub-regions where a pollutant is not monitored at a trend station, annual statistics are presented for performance monitoring stations. Concentrations where less than 75 per cent of the annual data were valid are shown in italics.

Historical monitoring data for monitoring stations that are no longer active are not included in this report. These data remain publicly available through the Queensland Government Air Quality website and the Queensland Government Open Data Portal¹⁰.

Carbon monoxide

Table 21. 2025 percentiles of daily peak 8-hour average CO concentrations

Region/performance monitoring station	Data availability (% of days)	Maximum (ppm)	Percentiles (ppm)					
			99 th	98 th	95 th	90 th	75 th	50 th
South East Queensland								
Brisbane sub-region								
Woolloongabba	99.5	0.97	0.77	0.66	0.56	0.42	0.32	0.24
Gladstone								
Boyne Island	91.8	0.96	0.34	0.33	0.25	0.23	0.17	0.12
AAQ NEPM standard for CO: 9.0 ppm (8-hour average). AAQ NEPM 2023 goal for CO: standard not to be exceeded.								

¹⁰ Queensland Government, Download air data, available at: <https://apps.des.qld.gov.au/air-quality/download/>

Table 22. Percentiles of daily peak 8-hour average CO concentrations at Woolloongabba (1998–2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Percentiles (ppm)			
				99 th	98 th	95 th	90 th
1998	57.0*	0	5.1	5.0	4.4	4.1	3.4
1999	92.3*	0	5.7	5.3	4.9	4.0	3.2
2000	92.9	0	5.0	4.7	4.2	3.4	2.9
2001	97.0	0	7.0	4.4	4.3	3.9	3.2
2002	97.0	0	4.7	4.7	4.1	3.6	3.0
2003	83.3*	0	5.4	4.4	4.2	3.5	2.7
2004	98.9	0	4.7	4.2	3.8	3.3	2.6
2005	95.1	0	4.0	3.5	3.3	2.6	2.1
2006	95.3	0	4.0	3.7	3.1	2.4	2.1
2007	26.0*	0	1.1	1.1	1.1	1.1	1.0
2008	66.9*	0	2.9	2.7	2.5	2.2	1.8
2009	100.0	0	2.4	2.3	2.1	1.8	1.5
2010	97.0	0	2.7	1.9	1.8	1.3	1.1
2011	99.5	0	1.9	1.7	1.6	1.3	1.0
2012	98.9	0	1.8	1.7	1.7	1.4	1.1
2013	99.7	0	1.6	1.4	1.3	1.1	0.9
2014	97.0	0	1.9	1.6	1.5	1.0	0.6
2015	98.1	0	1.6	1.4	1.3	1.0	0.8
2016	45.8*	0	1.2	1.2	1.2	1.0	0.8
2017	55.9*	0	1.1	1.0	0.9	0.8	0.7
2018	99.7	0	1.2	0.9	0.7	0.7	0.6
2019	95.3	0	1.2	1.0	0.8	0.7	0.6
2020	98.9	0	0.9	0.8	0.7	0.6	0.5
2021	97.8	0	0.9	0.8	0.7	0.6	0.5
2022	96.2	0	0.9	0.8	0.7	0.6	0.4
2023	90.4	0	0.8	0.8	0.7	0.6	0.5
2024	97.0	0	0.7	0.7	0.5	0.4	0.4
2025	99.5	0	1.0	0.8	0.7	0.6	0.4

* Data availability less than 75% for one or more quarters. Years shown in italics have less than 75% annual data availability.

AAQ NEPM standard for CO: 9.0 ppm (8-hour average).

AAQ NEPM goal for CO (until 2020): standard exceeded on no more than one day per year.

AAQ NEPM goal for CO (from 2021): standard not to be exceeded.

Table 23. Percentiles of daily peak 8-hour average CO concentrations at Boyne Island (2008–2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Percentiles (ppm)			
				99 th	98 th	95 th	90 th
2008	23.8*	0	0.3	0.3	0.3	0.2	0.2
2009	94.0	0	2.1	0.7	0.5	0.2	0.1
2010	95.1	0	1.0	0.8	0.4	0.2	0.1
2011	94.5	0	2.8	1.5	0.6	0.3	0.2
2012	99.2	0	1.3	0.5	0.4	0.3	0.3
2013	99.5	0	0.7	0.5	0.4	0.3	0.3
2014	98.9	0	0.9	0.4	0.3	0.2	0.2
2015	93.4	0	0.4	0.3	0.3	0.2	0.2
2016	99.2	0	1.4	0.4	0.3	0.2	0.2
2017	99.2	0	1.4	0.4	0.3	0.2	0.2
2018	94.2	0	0.4	0.1	0.1	0.1	0.1
2019	98.4	0	0.8	0.4	0.3	0.2	0.1
2020	100.0	0	0.3	0.3	0.3	0.2	0.2
2021	99.5	0	0.3	0.3	0.2	0.2	0.1
2022	77.8*	0	0.2	0.2	0.2	0.2	0.2
2023	16.7*	0	0.7	0.7	0.7	0.2	0.2
2024	98.6	0	0.2	0.2	0.2	0.2	0.2
2025	91.8	0	1.0	0.3	0.3	0.3	0.2

* Data availability less than 75% for one or more quarters. Years shown in italics have less than 75% annual data availability.

AAQ NEPM standard for CO: 9.0 ppm (8-hour average).

AAQ NEPM goal for CO (until 2020): standard exceeded on no more than one day per year.

AAQ NEPM goal for CO (from 2021): standard not to be exceeded.

Nitrogen dioxide

Table 24. 2025 percentiles of daily peak 1-hour average NO₂ concentrations

Region/performance monitoring station	Data availability (% of days)	Maximum (ppm)	Percentiles (ppm)					
			99 th	98 th	95 th	90 th	75 th	50 th
South East Queensland								
North Coast sub-region								
Mountain Creek	97.0	0.028	0.024	0.022	0.020	0.017	0.011	0.007
Brisbane sub-region								
Deception Bay	99.2	0.036	0.032	0.030	0.027	0.024	0.017	0.011
Rocklea	97.8	0.04	0.038	0.036	0.034	0.031	0.025	0.018
Springwood	99.7	0.033	0.028	0.027	0.025	0.022	0.018	0.011
Gold Coast sub-region								
Southport	98.4	0.035	0.029	0.028	0.026	0.023	0.018	0.010
Ipswich sub-region								
Raceview	98.1	0.038	0.036	0.034	0.029	0.027	0.020	0.014
Gladstone								
South Gladstone	100.0	0.037	0.031	0.029	0.027	0.023	0.018	0.013
Rockhampton								
West Rockhampton	28.8	0.020	0.016	0.011	0.009	0.008	0.006	0.005
Townsville								
North Ward	100.0	0.026	0.020	0.019	0.016	0.013	0.008	0.005
AAQ NEPM standard for NO ₂ : 0.08 ppm (1-hour average). AAQ NEPM goal for NO ₂ : standard not to be exceeded.								

Table 25. Percentiles of daily peak 1-hour average NO₂ concentrations at Mountain Creek (2002–2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
2002	91.5*	0	0.036	0.006	0.036	0.034	0.031	0.028
2003	91.4	0	0.033	0.005	0.029	0.028	0.026	0.023
2004	98.1	0	0.041	0.005	0.036	0.035	0.029	0.026
2005	100.0	0	0.032	0.005	0.031	0.028	0.025	0.022
2006	100.0	0	0.035	0.005	0.032	0.030	0.027	0.024
2007	100.0	0	0.034	0.004	0.030	0.028	0.026	0.022
2008	95.6	0	0.030	0.004	0.030	0.029	0.026	0.021
2009	99.7	0	0.030	0.004	0.029	0.027	0.024	0.021
2010	98.6	0	0.029	0.005	0.028	0.026	0.023	0.021
2011	97.8	0	0.032	0.004	0.027	0.027	0.023	0.021
2012	96.7	0	0.030	0.004	0.028	0.027	0.022	0.021
2013	99.7	0	0.031	0.004	0.029	0.026	0.023	0.020
2014	99.5	0	0.031	0.004	0.027	0.026	0.023	0.021
2015	100.0	0	0.030	0.003	0.027	0.024	0.021	0.019
2016	100.0	0	0.031	0.004	0.029	0.025	0.023	0.021
2017	99.7	0	0.044	0.004	0.032	0.032	0.027	0.023
2018	99.7	0	0.032	0.004	0.030	0.029	0.024	0.020
2019	99.7	0	0.035	0.004	0.028	0.027	0.024	0.019
2020	100.0	0	0.028	0.003	0.025	0.024	0.021	0.017
2021	99.7	0	0.026	0.003	0.022	0.022	0.020	0.019
2022	99.5	0	0.028	0.003	0.024	0.023	0.021	0.018
2023	100.0	0	0.035	0.005	0.034	0.031	0.028	0.025
2024	100.0	0	0.028	0.003	0.027	0.023	0.021	0.015
2025	97.0	0	0.028	0.003	0.024	0.022	0.020	0.017

* Data availability less than 75% for one or more quarters.

AAQ NEPM standards for NO₂ (until 2020): 0.12 ppm (1-hour average); 0.03 ppm (1-year average).

AAQ NEPM standards for NO₂ (from 2021): 0.08 ppm (1-hour average); 0.015 ppm (1-year average).

AAQ NEPM goal for NO₂ (until 2020): 1-hour standard exceeded on no more than one day per year.

AAQ NEPM goal for NO₂ (from 2021): standards not to be exceeded.

Table 26. Percentiles of daily peak 1-hour average NO₂ concentrations at Deception Bay (2000–2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
2000	99.5	0	0.053	0.005	0.038	0.034	0.029	0.025
2001	95.1	0	0.047	0.006	0.040	0.039	0.034	0.030
2002	87.4*	0	0.065	0.006	0.044	0.042	0.036	0.030
2003	94.5	0	0.053	0.006	0.036	0.033	0.030	0.028
2004	97.8	0	0.045	0.006	0.036	0.036	0.030	0.027
2005	95.3	0	0.034	0.006	0.033	0.030	0.028	0.026
2006	99.5	0	0.044	0.008	0.035	0.033	0.028	0.027
2007	94.2*	0	0.063	0.006	0.035	0.033	0.030	0.027
2008	84.7*	0	0.037	0.008	0.034	0.031	0.029	0.027
2009	100.0	0	0.036	0.005	0.030	0.028	0.026	0.024
2010	98.9	0	0.037	0.005	0.033	0.033	0.028	0.024
2011	99.5	0	0.035	0.006	0.033	0.030	0.029	0.027
2012	97.8	0	0.040	0.006	0.034	0.033	0.030	0.027
2013	67.9*	0	0.033	<i>i.d.</i>	0.033	0.031	0.029	0.025
2014	98.9	0	0.041	0.005	0.035	0.034	0.030	0.026
2015	100.0	0	0.048	0.005	0.033	0.032	0.029	0.025
2016	100.0	0	0.037	0.005	0.035	0.034	0.030	0.026
2017	100.0	0	0.038	0.005	0.036	0.033	0.030	0.027
2018	99.7	0	0.041	0.005	0.034	0.031	0.029	0.026
2019	97.0	0	0.038	0.005	0.035	0.034	0.028	0.024
2020	99.5	0	0.037	0.004	0.032	0.029	0.028	0.023
2021	99.7	0	0.034	0.005	0.032	0.030	0.027	0.023
2022	98.9	0	0.033	0.004	0.030	0.028	0.025	0.022
2023	99.2	0	0.029	0.003	0.027	0.025	0.023	0.019
2024	98.9	0	0.033	0.004	0.031	0.028	0.024	0.022
2025	99.2	0	0.036	0.004	0.032	0.030	0.027	0.024

* Data availability less than 75% for one or more quarters. Years shown in italics have less than 75% annual data availability.

i.d. = insufficient data to calculate value.

AAQ NEPM standards for NO₂ (until 2020): 0.12 ppm (1-hour average); 0.03 ppm (1-year average).

AAQ NEPM standards for NO₂ (from 2021): 0.08 ppm (1-hour average); 0.015 ppm (1-year average).

AAQ NEPM goal for NO₂ (until 2020): 1-hour standard exceeded on no more than one day per year.

AAQ NEPM goal for NO₂ (from 2021): standards not to be exceeded.

Table 27. Percentiles of daily peak 1-hour average NO₂ concentrations at Rocklea (2000-2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
2000	96.7	0	0.059	0.009	0.046	0.043	0.037	0.032
2001	98.4	0	0.049	0.009	0.042	0.041	0.035	0.032
2002	98.4	0	0.051	0.009	0.046	0.041	0.037	0.033
2003	97.0	0	0.050	0.009	0.039	0.038	0.033	0.030
2004	95.6	0	0.049	0.009	0.047	0.043	0.037	0.033
2005	98.6	0	0.046	0.009	0.042	0.041	0.036	0.031
2006	96.4	0	0.046	0.011	0.039	0.035	0.031	0.027
2007	100.0	0	0.044	0.008	0.041	0.040	0.035	0.031
2008	79.3*	0	0.047	0.008	0.041	0.034	0.030	0.027
2009	98.4	0	0.039	0.007	0.035	0.034	0.031	0.027
2010	98.4	0	0.039	0.007	0.037	0.033	0.028	0.023
2011	2.7*	0	0.020	<i>i.d.</i>	0.020	0.020	0.020	0.020
2012	63.9*	0	0.039	<i>i.d.</i>	0.035	0.032	0.030	0.027
2013	98.6	0	0.037	0.007	0.034	0.032	0.030	0.025
2014	99.5	0	0.047	0.007	0.040	0.037	0.032	0.027
2015	100.0	0	0.041	0.006	0.036	0.033	0.027	0.024
2016	99.5	0	0.057	0.007	0.037	0.034	0.028	0.025
2017	99.5	0	0.042	0.006	0.036	0.033	0.027	0.025
2018	100.0	0	0.045	0.007	0.042	0.040	0.034	0.029
2019	98.6	0	0.041	0.007	0.038	0.036	0.031	0.025
2020	99.7	0	0.033	0.006	0.031	0.029	0.025	0.022
2021	99.2	0	0.034	0.006	0.031	0.026	0.025	0.022
2022	75.9*	0	0.040	0.007	0.037	0.034	0.031	0.028
2023	99.4	0	0.042	0.007	0.039	0.037	0.032	0.027
2024	100.0	0	0.042	0.009	0.039	0.035	0.032	0.028
2025	97.8	0	0.040	0.010	0.038	0.036	0.034	0.031

Bold text indicates a value greater than the AAQ NEPM standard.

* Data availability less than 75% for one or more quarters. Years shown in italics have less than 75% annual data availability.

i.d. = insufficient data to calculate value.

AAQ NEPM standards for NO₂ (until 2020): 0.12 ppm (1-hour average); 0.03 ppm (1-year average).

AAQ NEPM standards for NO₂ (from 2021): 0.08 ppm (1-hour average); 0.015 ppm (1-year average).

AAQ NEPM goal for NO₂ (until 2020): 1-hour standard exceeded on no more than one day per year.

AAQ NEPM goal for NO₂ (from 2021): standards not to be exceeded.

Table 28. Percentiles of daily peak 1-hour average NO₂ concentrations at Springwood (1999–2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
1999	72.9*	0	0.039	<i>i.d.</i>	0.035	0.033	0.029	0.027
2000	69.7*	0	0.046	<i>i.d.</i>	0.040	0.037	0.034	0.032
2001	99.5	0	0.036	0.008	0.034	0.032	0.030	0.028
2002	96.2	0	0.045	0.008	0.041	0.035	0.032	0.030
2003	98.1	0	0.041	0.008	0.036	0.033	0.031	0.029
2004	93.4	0	0.038	0.008	0.037	0.034	0.032	0.030
2005	99.2	0	0.041	0.007	0.034	0.032	0.029	0.026
2006	81.9	0	0.044	0.007	0.033	0.032	0.031	0.027
2007	98.6	0	0.042	0.006	0.033	0.032	0.030	0.027
2008	95.6	0	0.038	0.006	0.031	0.029	0.029	0.026
2009	86.0	0	0.037	0.008	0.035	0.031	0.030	0.029
2010	93.4	0	0.036	0.007	0.034	0.033	0.031	0.029
2011	98.9	0	0.036	0.007	0.033	0.031	0.029	0.027
2012	80.3	0	0.047	0.006	0.035	0.030	0.028	0.026
2013	99.7	0	0.033	0.005	0.031	0.030	0.028	0.026
2014	97.5	0	0.035	0.005	0.032	0.031	0.029	0.027
2015	88.8	0	0.032	0.005	0.030	0.029	0.027	0.024
2016	98.6	0	0.034	0.006	0.032	0.031	0.028	0.027
2017	98.6	0	0.038	0.006	0.033	0.031	0.029	0.026
2018	94.0	0	0.036	0.006	0.033	0.032	0.030	0.027
2019	98.9	0	0.037	0.006	0.033	0.032	0.029	0.026
2020	93.2	0	0.031	0.005	0.029	0.027	0.026	0.023
2021	97.8	0	0.029	0.005	0.027	0.026	0.024	0.022
2022	95.3	0	0.033	0.005	0.029	0.026	0.024	0.022
2023	96.4	0	0.032	0.005	0.028	0.027	0.025	0.024
2024	100.0	0	0.031	0.005	0.027	0.026	0.023	0.021
2025	99.7	0	0.033	0.005	0.028	0.027	0.025	0.022

Bold text indicates a value greater than the AAQ NEPM standard.

* Data availability less than 75% for one or more quarters. Years shown in italics have less than 75% annual data availability.

i.d. = insufficient data to calculate value.

AAQ NEPM standards for NO₂ (until 2020): 0.12 ppm (1-hour average); 0.03 ppm (1-year average).

AAQ NEPM standards for NO₂ (from 2021): 0.08 ppm (1-hour average); 0.015 ppm (1-year average).

AAQ NEPM goal for NO₂ (until 2020): 1-hour standard exceeded on no more than one day per year.

AAQ NEPM goal for NO₂ (from 2021): standards not to be exceeded.

Table 29. Percentiles of daily peak 1-hour average NO₂ concentrations at Southport (2018-2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
2018	82.7	0	0.043	0.005	0.038	0.035	0.031	0.027
2019	98.4	0	0.044	0.005	0.033	0.031	0.028	0.026
2020	99.2	0	0.033	0.004	0.030	0.028	0.025	0.021
2021	96.2	0	0.034	0.004	0.029	0.029	0.027	0.024
2022	99.7	0	0.029	0.004	0.028	0.026	0.022	0.020
2023	99.2	0	0.038	0.005	0.033	0.032	0.029	0.026
2024	99.7	0	0.031	0.004	0.029	0.028	0.024	0.021
2025	98.4	0	0.035	0.004	0.029	0.028	0.026	0.023

Bold text indicates a value greater than the AAQ NEPM standard.

AAQ NEPM standards for NO₂ (until 2020): 0.12 ppm (1-hour average); 0.03 ppm (1-year average).
 AAQ NEPM standards for NO₂ (from 2021): 0.08 ppm (1-hour average); 0.015 ppm (1-year average).
 AAQ NEPM goal for NO₂ (until 2020): 1-hour standard exceeded on no more than one day per year.
 AAQ NEPM goal for NO₂ (from 2021): standards not to be exceeded.

Table 30. Percentiles of daily peak 1-hour average NO₂ concentrations at Raceview (2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
2025	98.1	0	0.038	0.006	0.036	0.034	0.029	0.027

AAQ NEPM standards for NO₂ (until 2020): 0.12 ppm (1-hour average); 0.03 ppm (1-year average).
 AAQ NEPM standards for NO₂ (from 2021): 0.08 ppm (1-hour average); 0.015 ppm (1-year average).
 AAQ NEPM goal for NO₂ (until 2020): 1-hour standard exceeded on no more than one day per year.
 AAQ NEPM goal for NO₂ (from 2021): standards not to be exceeded.

Table 31. Percentiles of daily peak 1-hour average NO₂ concentrations at South Gladstone (1999–2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
1999	88.8*	0	0.034	0.003	0.029	0.029	0.025	0.021
2000	97.8	0	0.031	0.003	0.025	0.024	0.022	0.019
2001	96.4	0	0.048	0.004	0.033	0.031	0.026	0.023
2002	98.4	0	0.036	0.004	0.031	0.029	0.026	0.021
2003	95.3	0	0.035	0.004	0.030	0.027	0.024	0.022
2004	100.0	0	0.042	0.004	0.030	0.029	0.026	0.023
2005	99.7	0	0.035	0.004	0.030	0.028	0.024	0.022
2006	100.0	0	0.034	0.003	0.027	0.027	0.024	0.021
2007	98.4	0	0.035	0.005	0.030	0.029	0.027	0.024
2008	98.6	0	0.033	0.003	0.030	0.026	0.023	0.020
2009	97.5	0	0.033	0.006	0.029	0.028	0.025	0.022
2010	98.4	0	0.033	0.006	0.031	0.029	0.026	0.023
2011	96.7	0	0.035	0.006	0.034	0.032	0.029	0.026
2012	94.0*	0	0.042	0.007	0.037	0.035	0.032	0.029
2013	95.3	0	0.042	0.007	0.037	0.035	0.032	0.027
2014	99.7	0	0.046	0.005	0.033	0.032	0.029	0.025
2015	99.7	0	0.043	0.005	0.036	0.032	0.028	0.025
2016	100.0	0	0.037	0.005	0.035	0.032	0.029	0.026
2017	99.2	0	0.074	0.005	0.033	0.030	0.027	0.025
2018	95.3	0	0.034	0.005	0.033	0.031	0.027	0.025
2019	97.3	0	0.036	0.005	0.031	0.030	0.026	0.023
2020	98.9	0	0.032	0.005	0.030	0.029	0.027	0.022
2021	90.7*	0	0.032	0.005	0.028	0.027	0.024	0.022
2022	99.7	0	0.032	0.004	0.028	0.027	0.024	0.021
2023	99.2	0	0.038	0.005	0.033	0.032	0.029	0.027
2024	100.0	0	0.031	0.004	0.029	0.026	0.023	0.020
2025	100.0	0	0.037	0.005	0.031	0.029	0.027	0.023

* Data availability less than 75% for one or more quarters.

AAQ NEPM standards for NO₂ (until 2020): 0.12 ppm (1-hour average); 0.03 ppm (1-year average).

AAQ NEPM standards for NO₂ (from 2021): 0.08 ppm (1-hour average); 0.015 ppm (1-year average).

AAQ NEPM goal for NO₂ (until 2020): 1-hour standard exceeded on no more than one day per year.

AAQ NEPM goal for NO₂ (from 2021): standards not to be exceeded.

Table 32. Percentiles of daily peak 1-hour average NO₂ concentrations at North Ward (2018–2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
2018	92.1*	0	0.023	0.002	0.022	0.021	0.018	0.014
2019	95.6	0	0.041	0.003	0.024	0.023	0.018	0.015
2020	96.2	0	0.024	0.002	0.020	0.018	0.014	0.011
2021	96.7	0	0.026	0.003	0.020	0.019	0.014	0.011
2022	99.7	0	0.024	0.003	0.020	0.019	0.015	0.013
2023	98.9	0	0.027	0.002	0.022	0.020	0.016	0.013
2024	96.5	0	0.025	0.002	0.020	0.018	0.015	0.012
2025	100.0	0	0.026	0.002	0.020	0.019	0.016	0.013

* Data availability less than 75% for one or more quarters.

AAQ NEPM standards for NO₂ (until 2020): 0.12 ppm (1-hour average); 0.03 ppm (1-year average).

AAQ NEPM standards for NO₂ (from 2021): 0.08 ppm (1-hour average); 0.015 ppm (1-year average).

AAQ NEPM goal for NO₂ (until 2020): 1-hour standard exceeded on no more than one day per year.

AAQ NEPM goal for NO₂ (from 2021): standards not to be exceeded.

Ozone

Table 33. 2025 percentiles of daily peak 8-hour average O₃ concentrations

Region/performance monitoring station	Data availability (% of days)	Maximum (ppm)	Percentiles (ppm)					
			99 th	98 th	95 th	90 th	75 th	50 th
South East Queensland								
North Coast sub-region								
Mountain Creek	98.9	0.051	0.043	0.040	0.037	0.034	0.031	0.028
Brisbane sub-region								
Deception Bay	94.8	0.053	0.051	0.046	0.041	0.038	0.033	0.029
Rocklea	97.3	0.053	0.044	0.043	0.040	0.038	0.032	0.026
Springwood	98.9	0.058	0.053	0.051	0.045	0.041	0.035	0.029
Gold Coast sub-region								
Southport	96.4	0.054	0.046	0.044	0.040	0.037	0.033	0.028
Ipswich sub-region								
Raceview	97.3	0.066	0.052	0.051	0.048	0.043	0.036	0.030
Rockhampton								
West Rockhampton	28.5	0.053	0.049	0.049	0.047	0.043	0.036	0.030
AAQ NEPM standard for O ₃ : 0.065 ppm (8-hour average). AAQ NEPM goal for O ₃ : standard not to be exceeded.								

Table 34. Percentiles of daily peak 8-hour average O₃ concentrations at Mountain Creek (2002–2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Percentiles (ppm)			
				99 th	98 th	95 th	90 th
2002	89.6*	0	0.048	0.043	0.041	0.037	0.034
2003	96.7	0	0.049	0.040	0.037	0.034	0.031
2004	98.6	0	0.045	0.040	0.039	0.034	0.032
2005	98.1	0	0.056	0.051	0.046	0.042	0.039
2006	98.6	0	0.056	0.045	0.042	0.039	0.037
2007	95.6	0	0.045	0.036	0.035	0.031	0.030
2008	93.7	0	0.048	0.040	0.038	0.034	0.032
2009	97.3	0	0.045	0.041	0.039	0.037	0.034
2010	96.7	0	0.050	0.037	0.036	0.034	0.032
2011	81.1*	0	0.059	0.050	0.044	0.037	0.033
2012	96.4	0	0.053	0.042	0.040	0.037	0.035
2013	97.0	0	0.045	0.041	0.040	0.038	0.035
2014	99.2	0	0.043	0.040	0.038	0.036	0.034
2015	94.8	0	0.047	0.039	0.037	0.035	0.033
2016	97.5	0	0.042	0.039	0.037	0.036	0.032
2017	98.4	0	0.053	0.045	0.043	0.040	0.037
2018	98.4	0	0.045	0.041	0.040	0.037	0.035
2019	99.2	0	0.054	0.048	0.045	0.040	0.036
2020	99.7	0	0.049	0.040	0.038	0.036	0.034
2021	97.0	0	0.049	0.038	0.037	0.034	0.032
2022	98.6	0	0.042	0.040	0.038	0.034	0.032
2023	99.2	0	0.046	0.040	0.039	0.035	0.033
2024	97.3	0	0.047	0.041	0.041	0.038	0.035
2025	98.9	0	0.051	0.043	0.040	0.037	0.034
* Data availability less than 75% for one or more quarters. AAQ NEPM standard for O ₃ (from 2021): 0.065 ppm (8-hour average). AAQ NEPM goal for O ₃ : standard not to be exceeded.							

Table 35. Percentiles of daily peak 8-hour average O₃ concentrations at Deception Bay (1996–2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Percentiles (ppm)			
				99 th	98 th	95 th	90 th
1996	96.2	1	0.068	0.055	0.052	0.045	0.041
1997	99.7	0	0.057	0.050	0.045	0.040	0.037
1998	94.0	0	0.051	0.046	0.042	0.041	0.037
1999	98.6	0	0.062	0.047	0.044	0.040	0.037
2000	98.7	0	0.056	0.044	0.043	0.039	0.036
2001	84.7*	1	0.070	0.051	0.045	0.040	0.038
2002	88.2*	0	0.062	0.051	0.048	0.042	0.038
2003	95.6	0	0.065	0.053	0.048	0.041	0.037
2004	96.4	0	0.054	0.049	0.045	0.040	0.038
2005	96.4	0	0.056	0.053	0.046	0.042	0.039
2006	97.5	0	0.056	0.046	0.043	0.040	0.037
2007	97.3	0	0.058	0.049	0.046	0.041	0.038
2008	98.4	0	0.061	0.053	0.049	0.040	0.037
2009	98.4	0	0.055	0.047	0.045	0.042	0.038
2010	97.3	0	0.044	0.042	0.040	0.037	0.035
2011	98.6	2	0.073	0.058	0.044	0.041	0.037
2012	98.9	0	0.053	0.048	0.046	0.041	0.039
2013	67.7*	0	0.052	0.052	0.046	0.044	0.041
2014	97.8	0	0.047	0.044	0.042	0.039	0.037
2015	99.7	0	0.053	0.043	0.042	0.038	0.035
2016	99.5	0	0.050	0.045	0.044	0.040	0.036
2017	99.2	0	0.054	0.050	0.048	0.043	0.040
2018	98.9	0	0.049	0.044	0.041	0.038	0.036
2019	97.0	1	0.069	0.055	0.052	0.044	0.038
2020	99.2	0	0.054	0.045	0.043	0.040	0.036
2021	99.5	0	0.052	0.043	0.042	0.040	0.037
2022	98.9	0	0.057	0.050	0.047	0.039	0.037
2023	99.2	0	0.058	0.047	0.044	0.039	0.037
2024	98.9	0	0.052	0.049	0.043	0.040	0.036
2025	94.8	0	0.053	0.051	0.046	0.041	0.038

Bold text indicates a value greater than the AAQ NEPM standard.

* Data availability less than 75% for one or more quarters. Years shown in italics have less than 75% annual data availability.

AAQ NEPM standard for O₃ (from 2021): 0.065 ppm (8-hour average).

AAQ NEPM goal for O₃: standard not to be exceeded.

Table 36. Percentiles of daily peak 8-hour average O₃ concentrations at Rocklea (1996-2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Percentiles (ppm)			
				99 th	98 th	95 th	90 th
1996	97.5	2	0.087	0.061	0.056	0.049	0.043
1997	96.4	0	0.059	0.057	0.052	0.046	0.039
1998	96.4	1	0.066	0.055	0.050	0.047	0.041
1999	93.4	1	0.073	0.057	0.049	0.042	0.038
2000	96.4	0	0.063	0.054	0.046	0.043	0.039
2001	97.0	0	0.056	0.050	0.046	0.043	0.038
2002	97.8	1	0.079	0.055	0.052	0.045	0.041
2003	97.3	0	0.054	0.045	0.043	0.040	0.037
2004	95.9	1	0.066	0.057	0.053	0.048	0.043
2005	97.0	0	0.057	0.051	0.049	0.045	0.042
2006	95.6	0	0.053	0.046	0.045	0.043	0.039
2007	93.2	0	0.053	0.050	0.045	0.042	0.039
2008	81.6*	0	0.053	0.047	0.045	0.042	0.036
2009	96.4	0	0.053	0.050	0.048	0.043	0.038
2010	97.3	0	0.062	0.049	0.044	0.039	0.035
2011	2.7*	0	0.027	0.027	0.027	0.027	0.024
2012	62.7*	0	0.056	0.055	0.047	0.045	0.041
2013	99.5	0	0.052	0.049	0.048	0.043	0.040
2014	99.5	0	0.060	0.054	0.048	0.044	0.041
2015	97.8	0	0.061	0.053	0.051	0.043	0.038
2016	97.8	0	0.048	0.046	0.045	0.041	0.037
2017	97.8	0	0.054	0.046	0.044	0.042	0.039
2018	98.9	0	0.058	0.053	0.050	0.043	0.038
2019	97.3	2	0.079	0.060	0.056	0.051	0.043
2020	99.5	0	0.050	0.047	0.045	0.043	0.039
2021	98.6	0	0.054	0.049	0.045	0.041	0.037
2022	77.0*	0	0.052	0.042	0.040	0.038	0.034
2023	99.2	0	0.051	0.049	0.045	0.039	0.035
2024	99.2	0	0.061	0.048	0.046	0.041	0.037
2025	97.3	0	0.053	0.044	0.043	0.040	0.038

Bold text indicates a value greater than the AAQ NEPM standard.

* Data availability less than 75% for one or more quarters. Years shown in italics have less than 75% annual data availability.

AAQ NEPM standard for O₃ (from 2021): 0.065 ppm (8-hour average).

AAQ NEPM goal for O₃: standard not to be exceeded.

Table 37. Percentiles of daily peak 8-hour average O₃ concentrations at Springwood (1999-2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Percentiles (ppm)			
				99 th	98 th	95 th	90 th
1999	66.0*	0	0.039	0.037	0.035	0.032	0.030
2000	67.5*	3	0.067	0.047	0.045	0.040	0.036
2001	98.6	0	0.051	0.042	0.040	0.037	0.034
2002	91.0	0	0.047	0.042	0.039	0.035	0.032
2003	98.6	0	0.035	0.033	0.032	0.029	0.027
2004	95.6	0	0.046	0.037	0.034	0.029	0.028
2005	98.6	0	0.037	0.034	0.031	0.029	0.026
2006	81.4	0	0.034	0.029	0.028	0.027	0.025
2007	95.1	0	0.031	0.030	0.029	0.026	0.024
2008	88.8	0	0.029	0.027	0.026	0.023	0.021
2009	72.1*	0	0.043	0.040	0.038	0.035	0.030
2010	94.8	0	0.043	0.039	0.038	0.033	0.031
2011	86.3	4	0.069	0.045	0.040	0.036	0.032
2012	79.2	0	0.049	0.042	0.038	0.035	0.033
2013	98.1	0	0.044	0.042	0.038	0.035	0.032
2014	96.7	0	0.044	0.037	0.035	0.032	0.030
2015	85.8	0	0.049	0.042	0.036	0.032	0.029
2016	92.1	0	0.048	0.037	0.035	0.033	0.030
2017	93.2	0	0.043	0.040	0.039	0.035	0.032
2018	72.1	0	0.048	0.045	0.039	0.035	0.032
2019	99.2	2	0.067	0.054	0.050	0.044	0.038
2020	93.2	0	0.049	0.045	0.043	0.040	0.037
2021	98.1	0	0.053	0.051	0.045	0.041	0.038
2022	95.3	0	0.048	0.046	0.044	0.038	0.034
2023	98.1	0	0.056	0.049	0.046	0.042	0.039
2024	100.0	0	0.056	0.053	0.050	0.044	0.040
2025	98.9	0	0.058	0.053	0.051	0.045	0.041

Bold text indicates a value greater than the AAQ NEPM standard.

* Data availability less than 75% for one or more quarters. Years shown in italics have less than 75% annual data availability.

AAQ NEPM standard for O₃ (from 2021): 0.065 ppm (8-hour average).

AAQ NEPM goal for O₃: standard not to be exceeded.

Table 38. Percentiles of daily peak 8-hour average O₃ concentrations at Southport (2018-2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Percentiles (ppm)			
				99 th	98 th	95 th	90 th
2018	83.3	0	0.050	0.046	0.042	0.040	0.036
2019	97.8	3	0.068	0.058	0.052	0.046	0.039
2020	97.8	0	0.045	0.040	0.039	0.037	0.034
2021	96.2	0	0.050	0.040	0.039	0.036	0.033
2022	99.5	0	0.050	0.043	0.038	0.036	0.033
2023	98.9	0	0.049	0.045	0.042	0.039	0.035
2024	99.2	0	0.048	0.047	0.045	0.040	0.037
2025	96.4	0	0.054	0.046	0.044	0.040	0.037

Bold text indicates a value greater than the AAQ NEPM standard.
 AAQ NEPM standard for O₃ (from 2021): 0.065 ppm (8-hour average).
 AAQ NEPM goal for O₃: standard not to be exceeded.

Table 39. Percentiles of daily peak 8-hour average O₃ concentrations at Raceview (2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Percentiles (ppm)			
				99 th	98 th	95 th	90 th
2025	97.3	1	0.066	0.052	0.051	0.048	0.043

Bold text indicates a value greater than the AAQ NEPM standard.
 AAQ NEPM standard for O₃ (from 2021): 0.065 ppm (8-hour average).
 AAQ NEPM goal for O₃: standard not to be exceeded.

Sulfur dioxide

Table 40. 2025 percentiles of daily peak 1-hour average SO₂ concentrations

Region/performance monitoring station	Data availability (% of days)	Maximum (ppm)	Percentiles (ppm)					
			99 th	98 th	95 th	90 th	75 th	50 th
South East Queensland								
Brisbane sub-region								
Springwood	99.2	0.005	0.004	0.003	0.003	0.002	0.001	0.001
Ipswich sub-region								
Raceview	95.9	0.005	0.003	0.003	0.002	0.002	0.001	0.001
Gladstone								
South Gladstone	99.2	0.068	0.049	0.040	0.033	0.023	0.014	0.007
Rockhampton								
West Rockhampton	28.8	0.005	0.005	0.004	0.003	0.002	0.001	0.001
Townsville								
North Ward	98.9	0.013	0.005	0.003	0.002	0.002	0.001	0.001
Mount Isa								
The Gap	98.9	0.607	0.333	0.275	0.119	0.078	0.025	0.001
Bold text indicates a value greater than the AAQ NEPM standard. AAQ NEPM standard for SO ₂ : 0.075 ppm (1-hour average). AAQ NEPM goal for SO ₂ : standard not to be exceeded.								

Table 41. 2025 percentiles of daily 1-day average SO₂ concentrations

Region/performance monitoring station	Data availability (% of days)	Maximum (ppm)	Percentiles (ppm)					
			99 th	98 th	95 th	90 th	75 th	50 th
South East Queensland								
Brisbane sub-region								
Springwood	99.2	0.001	0.001	0.001	0.001	0.001	0.000	0.000
Ipswich sub-region								
Raceview	95.9	0.001	0.001	0.001	0.001	0.001	0.000	0.000
Gladstone								
South Gladstone	99.2	0.013	0.010	0.008	0.006	0.004	0.002	0.001
Rockhampton								
West Rockhampton	28.8	0.001	0.001	0.001	0.001	0.001	0.000	0.000
Townsville								
North Ward	98.9	0.001	0.001	0.001	0.000	0.000	0.000	0.000
Mount Isa								
The Gap	98.9	0.053	0.028	0.027	0.017	0.011	0.003	0.000
Bold text indicates a value greater than the AAQ NEPM standard. AAQ NEPM standard for SO ₂ : 0.02 ppm (1-day average). AAQ NEPM goal for SO ₂ : standard not to be exceeded.								

Table 42. Percentiles of daily peak 1-hour average SO₂ concentrations at Springwood (1999–2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
1999	70.7*	0	0.024	<i>i.d.</i>	0.013	0.011	0.008	0.006
2000	68.9*	0	0.019	<i>i.d.</i>	0.014	0.009	0.008	0.006
2001	99.2	0	0.046	0.001	0.017	0.01	0.007	0.005
2002	96.2	0	0.027	0.001	0.012	0.011	0.006	0.005
2003	98.6	0	0.023	0.001	0.011	0.009	0.007	0.005
2004	95.4	0	0.017	0.001	0.012	0.011	0.009	0.007
2005	98.6	0	0.015	0.001	0.007	0.007	0.005	0.004
2006	81.9	0	0.019	0.000	0.008	0.007	0.005	0.003
2007	95.6	0	0.012	0.000	0.009	0.007	0.005	0.004
2008	89.9	0	0.011	0.000	0.007	0.006	0.005	0.003
2009	84.4	0	0.014	0.001	0.009	0.009	0.007	0.005
2010	98.1	0	0.011	0.001	0.008	0.007	0.006	0.005
2011	93.2	0	0.011	0.001	0.010	0.008	0.006	0.005
2012	80.3	0	0.013	0.000	0.011	0.008	0.006	0.003
2013	98.4	0	0.012	0.001	0.007	0.006	0.005	0.004
2014	97.5	0	0.012	0.001	0.009	0.008	0.006	0.005
2015	88.2	0	0.010	0.001	0.008	0.007	0.006	0.004
2016	96.2	0	0.017	0.001	0.011	0.008	0.006	0.004
2017	84.7	0	0.017	0.001	0.011	0.010	0.008	0.006
2018	94.8	0	0.012	0.001	0.012	0.010	0.008	0.006
2019	99.2	0	0.009	0.001	0.008	0.007	0.006	0.004
2020	94.8	0	0.009	0.000	0.006	0.005	0.003	0.002
2021	87.1	0	0.007	0.000	0.006	0.005	0.004	0.002
2022	97.8	0	0.006	0.000	0.005	0.004	0.002	0.002
2023	98.6	0	0.011	0.000	0.004	0.004	0.003	0.002
2024	99.5	0	0.009	0.000	0.004	0.004	0.002	0.002
2025	99.2	0	0.005	0.000	0.004	0.003	0.003	0.002

* Data availability less than 75% for one or more quarters. Years shown in italics have less than 75% annual data availability.

i.d. = insufficient data to calculate value.

AAQ NEPM standards for SO₂ (until 2020): 0.20 ppm (1-hour average); 0.02 ppm (1-year average).

AAQ NEPM standard for SO₂ (from 2021 until 2024): 0.10 ppm (1-hour average).

AAQ NEPM standard for SO₂ (from 2025): 0.075 ppm (1-hour average).

AAQ NEPM goal for SO₂ (until 2020): 1-hour standard exceeded on no more than one day per year.

AAQ NEPM goal for SO₂ (from 2021): standard not to be exceeded.

Table 43. Percentiles of daily peak 1-hour average SO₂ concentrations at Raceview (2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
2025	95.9	0	0.005	0.000	0.003	0.003	0.002	0.002
AAQ NEPM standards for SO ₂ (until 2020): 0.20 ppm (1-hour average); 0.02 ppm (1-year average). AAQ NEPM standard for SO ₂ (from 2021 until 2024): 0.075 ppm (1-hour average). AAQ NEPM standard for SO ₂ (from 2025): 0.075 ppm (1-hour average). AAQ NEPM goal for SO ₂ (until 2020): 1-hour standard exceeded on no more than one day per year. AAQ NEPM goal for SO ₂ (from 2021): standard not to be exceeded.								

Table 44. Percentiles of daily peak 1-hour average SO₂ concentrations at South Gladstone (1998–2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
1998	97.5	1	0.076	0.001	0.050	0.042	0.027	0.020
1999	94.2	0	0.051	0.002	0.042	0.039	0.027	0.022
2000	84.7*	1	0.092	0.001	0.071	0.045	0.034	0.024
2001	98.1	0	0.068	0.001	0.046	0.035	0.023	0.018
2002	94.5	1	0.123	0.001	0.040	0.031	0.025	0.020
2003	93.2	1	0.112	0.001	0.058	0.041	0.025	0.019
2004	96.4	0	0.064	0.001	0.040	0.032	0.022	0.017
2005	99.7	1	0.084	0.002	0.063	0.053	0.032	0.027
2006	100.0	3	0.093	0.002	0.071	0.064	0.049	0.034
2007	98.4	0	0.075	0.002	0.069	0.061	0.044	0.035
2008	98.6	3	0.140	0.002	0.065	0.056	0.042	0.026
2009	97.5	0	0.053	0.002	0.040	0.035	0.028	0.021
2010	98.4	0	0.052	0.002	0.038	0.035	0.028	0.022
2011	97.3	1	0.091	0.003	0.049	0.045	0.033	0.026
2012	99.5	0	0.059	0.002	0.050	0.045	0.030	0.024
2013	95.3	0	0.067	0.002	0.053	0.042	0.033	0.028
2014	99.7	0	0.068	0.002	0.060	0.059	0.040	0.033
2015	95.1	1	0.077	0.002	0.057	0.052	0.039	0.025
2016	97.8	0	0.061	0.002	0.053	0.051	0.038	0.030
2017	99.2	0	0.073	0.002	0.038	0.036	0.030	0.021
2018	97.3	0	0.058	0.002	0.048	0.045	0.034	0.026
2019	97.3	0	0.071	0.002	0.058	0.054	0.041	0.029
2020	98.6	1	0.076	0.002	0.045	0.043	0.037	0.028
2021	100.0	0	0.062	0.002	0.043	0.041	0.033	0.026
2022	100.0	1	0.078	0.002	0.058	0.055	0.044	0.035
2023	99.5	0	0.074	0.002	0.050	0.047	0.040	0.031
2024	99.5	0	0.070	0.002	0.052	0.043	0.026	0.026
2025	99.2	0	0.068	0.002	0.049	0.040	0.033	0.023

Bold text indicates a value greater than the AAQ NEPM standard.

* Data availability less than 75% for one or more quarters.

AAQ NEPM standards for SO₂ (until 2020): 0.20 ppm (1-hour average); 0.02 ppm (1-year average).

AAQ NEPM standard for SO₂ (from 2021 until 2024): 0.10 ppm (1-hour average).

AAQ NEPM standard for SO₂ (from 2025): 0.075 ppm (1-hour average).

AAQ NEPM goal for SO₂ (until 2020): 1-hour standard exceeded on no more than one day per year.

AAQ NEPM goal for SO₂ (from 2021): standard not to be exceeded.

Table 45. Percentiles of daily peak 1-hour average SO₂ concentrations at North Ward (2018-2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
2018	95.3	0	0.009	0.001	0.005	0.005	0.004	0.003
2019	86.3*	0	0.010	0.000	0.007	0.005	0.003	0.003
2020	96.2	0	0.003	0.000	0.002	0.002	0.001	0.001
2021	97.0	0	0.009	0.000	0.005	0.004	0.002	0.002
2022	100.0	0	0.006	0.000	0.004	0.003	0.002	0.001
2023	98.1	0	0.005	0.000	0.003	0.002	0.001	0.001
2024	95.6	0	0.005	0.000	0.004	0.003	0.002	0.001
2025	98.9	0	0.013	0.000	0.005	0.003	0.002	0.002
* Data availability less than 75% for one or more quarters. AAQ NEPM standards for SO₂ (until 2020): 0.20 ppm (1-hour average); 0.02 ppm (1-year average). AAQ NEPM standard for SO₂ (from 2021 until 2024): 0.10 ppm (1-hour average). AAQ NEPM standard for SO₂ (from 2025): 0.075 ppm (1-hour average). AAQ NEPM goal for SO₂ (until 2020): 1-hour standard exceeded on no more than one day per year. AAQ NEPM goal for SO₂ (from 2021): standard not to be exceeded.								

Table 46. Percentiles of daily peak 1-hour average SO₂ concentrations at The Gap (2009-2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
2009	81.1*	36	0.591	0.004	0.389	0.264	0.155	0.103
2010	98.6	48	0.608	0.003	0.421	0.267	0.206	0.114
2011	97.3	69	0.580	0.005	0.524	0.347	0.213	0.146
2012	93.2	55	0.627	0.004	0.426	0.341	0.227	0.145
2013	89.9	53	0.636	0.005	0.477	0.316	0.235	0.161
2014	94.2	56	0.613	0.004	0.376	0.284	0.176	0.102
2015	99.7	50	0.494	0.004	0.378	0.340	0.215	0.127
2016	94.8	53	0.504	0.005	0.328	0.278	0.228	0.138
2017	97.0	69	0.579	0.005	0.397	0.310	0.188	0.131
2018	96.2	46	0.366	0.004	0.317	0.240	0.167	0.109
2019	98.1	33	0.433	0.002	0.327	0.309	0.141	0.068
2020	91.3	56	0.401	0.004	0.309	0.254	0.174	0.122
2021	96.2	64	0.848	0.006	0.514	0.372	0.199	0.139
2022	93.4	56	0.698	0.004	0.381	0.295	0.194	0.125
2023	77.8*	41	0.546	0.003	0.265	0.207	0.162	0.104
2024	99.7	31	0.323	0.003	0.256	0.224	0.122	0.070
2025	98.9	39	0.607	0.003	0.333	0.275	0.119	0.078

Bold text indicates a value greater than the AAQ NEPM standard.

* Data availability less than 75% for one or more quarters.

AAQ NEPM standards for SO₂ (until 2020): 0.20 ppm (1-hour average); 0.02 ppm (1-year average).

AAQ NEPM standard for SO₂ (from 2021 until 2024): 0.10 ppm (1-hour average).

AAQ NEPM standard for SO₂ (from 2025): 0.075 ppm (1-hour average).

AAQ NEPM goal for SO₂ (until 2020): 1-hour standard exceeded on no more than one day per year.

AAQ NEPM goal for SO₂ (from 2021): standard not to be exceeded.

Table 47. Percentiles of daily 1-day average SO₂ concentrations at Springwood (1999–2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
1999	70.7*	0	0.004	<i>i.d.</i>	0.003	0.002	0.002	0.001
2000	68.9*	0	0.006	<i>i.d.</i>	0.003	0.002	0.002	0.002
2001	99.2	0	0.006	0.001	0.002	0.002	0.002	0.001
2002	96.2	0	0.003	0.001	0.003	0.002	0.002	0.002
2003	98.6	0	0.004	0.001	0.003	0.002	0.002	0.002
2004	95.4	0	0.004	0.001	0.003	0.003	0.002	0.002
2005	98.6	0	0.003	0.001	0.002	0.002	0.002	0.002
2006	81.9	0	0.002	0.001	0.002	0.001	0.001	0.001
2007	95.6	0	0.002	0.001	0.002	0.002	0.001	0.001
2008	89.9	0	0.002	0.000	0.001	0.001	0.001	0.001
2009	84.4	0	0.004	0.000	0.003	0.003	0.002	0.002
2010	98.1	0	0.003	0.000	0.002	0.002	0.002	0.002
2011	93.2	0	0.005	0.001	0.004	0.004	0.003	0.003
2012	80.3	0	0.002	0.001	0.002	0.002	0.001	0.001
2013	98.4	0	0.003	0.001	0.002	0.002	0.002	0.001
2014	97.5	0	0.004	0.000	0.003	0.002	0.002	0.002
2015	88.2	0	0.003	0.001	0.003	0.002	0.002	0.002
2016	96.2	0	0.004	0.001	0.003	0.003	0.002	0.002
2017	84.7	0	0.004	0.001	0.003	0.003	0.002	0.002
2018	94.8	0	0.005	0.001	0.003	0.003	0.003	0.002
2019	99.2	0	0.002	0.001	0.002	0.002	0.002	0.001
2020	94.8	0	0.002	0.001	0.002	0.001	0.001	0.001
2021	87.1	0	0.002	0.001	0.001	0.001	0.001	0.001
2022	97.8	0	0.002	0.000	0.002	0.001	0.001	0.001
2023	98.6	0	0.002	0.000	0.002	0.002	0.001	0.001
2024	99.5	0	0.002	0.000	0.001	0.001	0.001	0.001
2025	99.2	0	0.001	0.000	0.001	0.001	0.001	0.001

* Data availability less than 75% for one or more quarters. Years shown in italics have less than 75% annual data availability.

i.d. = insufficient data to calculate value.

AAQ NEPM standards for SO₂ (until 2020): 0.08 ppm (1-day average); 0.02 ppm (1-year average).

AAQ NEPM standard for SO₂ (from 2021): 0.02 ppm (1-day average).

AAQ NEPM goal for SO₂ (until 2020): 1-day standard exceeded on no more than one day per year.

AAQ NEPM goal for SO₂ (from 2021): standard not to be exceeded.

Table 48. Percentiles of daily 1-day average SO₂ concentrations at Raceview (2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
2025	95.9	0	0.001	0.000	0.001	0.001	0.001	0.001
AAQ NEPM standards for SO ₂ (until 2020): 0.08 ppm (1-day average); 0.02 ppm (1-year average). AAQ NEPM standard for SO ₂ (from 2021): 0.02 ppm (1-day average). AAQ NEPM goal for SO ₂ (until 2020): 1-day standard exceeded on no more than one day per year. AAQ NEPM goal for SO ₂ (from 2021): standard not to be exceeded.								

Table 49. Percentiles of daily 1-day average SO₂ concentrations at South Gladstone (1998-2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
1998	97.5	0	0.012	0.001	0.010	0.007	0.005	0.003
1999	94.2	0	0.009	0.002	0.008	0.006	0.005	0.004
2000	84.7*	1	0.022	0.001	0.008	0.006	0.004	0.003
2001	98.1	0	0.006	0.001	0.005	0.004	0.003	0.002
2002	94.5	1	0.029	0.001	0.006	0.005	0.004	0.003
2003	93.2	0	0.013	0.001	0.011	0.007	0.005	0.003
2004	96.4	0	0.007	0.001	0.006	0.006	0.004	0.003
2005	98.9	0	0.011	0.002	0.009	0.006	0.004	0.004
2006	97.5	0	0.019	0.003	0.014	0.011	0.008	0.006
2007	97.5	1	0.021	0.002	0.012	0.010	0.007	0.005
2008	97.0	0	0.018	0.002	0.010	0.009	0.006	0.005
2009	93.7	0	0.009	0.002	0.008	0.007	0.006	0.004
2010	98.4	0	0.010	0.002	0.009	0.007	0.005	0.004
2011	97.3	0	0.011	0.003	0.011	0.009	0.008	0.005
2012	99.5	0	0.010	0.002	0.009	0.008	0.006	0.005
2013	95.3	0	0.013	0.002	0.010	0.008	0.006	0.004
2014	99.7	0	0.014	0.002	0.013	0.011	0.008	0.005
2015	95.1	0	0.013	0.002	0.012	0.010	0.008	0.005
2016	97.8	0	0.012	0.002	0.011	0.010	0.007	0.005
2017	99.2	0	0.011	0.002	0.009	0.008	0.005	0.004
2018	97.3	0	0.010	0.002	0.009	0.008	0.006	0.005
2019	97.3	0	0.013	0.002	0.010	0.010	0.007	0.006
2020	98.6	0	0.017	0.002	0.010	0.009	0.008	0.005
2021	100.0	0	0.012	0.002	0.009	0.009	0.006	0.004
2022	100.0	0	0.015	0.002	0.012	0.010	0.007	0.005
2023	99.5	0	0.013	0.002	0.011	0.010	0.007	0.005
2024	99.5	0	0.011	0.002	0.010	0.009	0.006	0.004
2025	99.2	0	0.013	0.002	0.010	0.008	0.006	0.004

Bold text indicates a value greater than the AAQ NEPM standard.

* Data availability less than 75% for one or more quarters.

AAQ NEPM standards for SO₂ (until 2020): 0.08 ppm (1-day average); 0.02 ppm (1-year average).

AAQ NEPM standard for SO₂ (from 2021): 0.02 ppm (1-day average).

AAQ NEPM goal for SO₂ (until 2020): 1-day standard exceeded on no more than one day per year.

AAQ NEPM goal for SO₂ (from 2021): standard not to be exceeded.

Table 50. Percentiles of daily 1-day average SO₂ concentrations at North Ward (2018–2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
2018	95.3	0	0.002	0.001	0.002	0.001	0.001	0.001
2019	86.3*	0	0.001	0.000	0.001	0.001	0.001	0.001
2020	96.2	0	0.001	0.000	0.001	0.001	0.001	0.001
2021	97.0	0	0.001	0.000	0.001	0.001	0.001	0.000
2022	100.0	0	0.001	0.000	0.001	0.001	0.000	0.000
2023	98.1	0	0.001	0.000	0.001	0.001	0.001	0.001
2024	95.6	0	0.001	0.000	0.001	0.001	0.000	0.000
2025	98.9	0	0.001	0.000	0.001	0.001	0.000	0.000

* Data availability less than 75% for one or more quarters.

AAQ NEPM standards for SO₂ (until 2020): 0.08 ppm (1-day average); 0.02 ppm (1-year average).

AAQ NEPM standard for SO₂ (from 2021): 0.02 ppm (1-day average).

AAQ NEPM goal for SO₂ (until 2020): 1-day standard exceeded on no more than one day per year.

AAQ NEPM goal for SO₂ (from 2021): standard not to be exceeded.

Table 51. Percentiles of daily 1-day average SO₂ concentrations at The Gap (2009–2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
2009	80.3*	13	0.073	0.004	0.047	0.027	0.018	0.011
2010	98.6	24	0.060	0.003	0.043	0.035	0.024	0.014
2011	97.3	28	0.060	0.005	0.044	0.042	0.028	0.017
2012	93.2	23	0.075	0.004	0.052	0.042	0.027	0.014
2013	89.9	25	0.071	0.005	0.060	0.042	0.032	0.017
2014	94.2	16	0.059	0.004	0.041	0.031	0.020	0.012
2015	99.7	30	0.056	0.004	0.039	0.035	0.027	0.015
2016	94.8	25	0.058	0.005	0.046	0.036	0.027	0.015
2017	97.0	21	0.053	0.005	0.051	0.046	0.024	0.014
2018	96.2	22	0.054	0.004	0.044	0.035	0.023	0.015
2019	98.1	10	0.044	0.002	0.034	0.030	0.015	0.008
2020	91.3	23	0.055	0.004	0.044	0.035	0.026	0.013
2021	96.2	33	0.071	0.006	0.060	0.047	0.030	0.020
2022	93.4	25	0.058	0.004	0.051	0.043	0.027	0.015
2023	77.8*	10	0.039	0.003	0.030	0.027	0.019	0.011
2024	99.7	10	0.040	0.003	0.030	0.024	0.015	0.010
2025	98.9	11	0.053	0.003	0.028	0.027	0.017	0.011

Bold text indicates a value greater than the AAQ NEPM standard.

* Data availability less than 75% for one or more quarters.

AAQ NEPM standards for SO₂ (until 2020): 0.08 ppm (1-day average); 0.02 ppm (1-year average).

AAQ NEPM standard for SO₂ (from 2021): 0.02 ppm (1-day average).

AAQ NEPM goal for SO₂ (until 2020): 1-day standard exceeded on no more than one day per year.

AAQ NEPM goal for SO₂ (from 2021): standard not to be exceeded.

PM₁₀Table 52. 2025 percentiles of daily 1-day average PM₁₀ concentrations

Region/performance monitoring station	Data availability (% of days)	Maximum (ppm)	Percentiles (ppm)					
			99 th	98 th	95 th	90 th	75 th	50 th
South East Queensland								
North Coast sub-region								
Mountain Creek	98.1	42.0	28.0	27.3	23.6	21.1	16.8	12.7
Brisbane sub-region								
Rocklea [†]	98.4	50.3	41.1	38.6	32.5	28.1	21.3	16.2
Springwood	99.2	45.0	31.0	29.6	25.1	21.9	17.4	13.6
Gold Coast sub-region								
Southport	97.3	47.7	32.6	29.3	25.2	22.0	17.2	13.0
Ipswich sub-region								
Raceview	97.3	69.1	50.1	46.0	36.1	30.9	24.9	18.6
Toowoomba								
Toowoomba	97.8	45.3	34.6	28.7	22.2	18.0	14.6	11.2
Maryborough – Hervey Bay								
Maryborough	99.2	41.3	32.4	28.0	23.5	20.2	16.7	13.1
Gladstone								
South Gladstone	100.0	92.2	39.1	32.8	27.1	24.3	18.9	14.9
Rockhampton								
West Rockhampton	28.8	60.4	30.1	29.5	24.9	24.4	19.6	16.9
Mackay								
West Mackay	99.5	53.5	36.1	29.4	26.9	24.1	20.5	17.3
Townsville								
North Ward	100.0	57.0	40.9	32.3	25.2	22.8	18.6	14.8
Cairns								
Woree	99.7	64.4	50.3	45.9	37.2	27.6	21.0	16.8
Mount Isa								
The Gap	93.7	54.9	32.9	30.5	27.0	23.9	17.9	12.6
Bold text indicates a value greater than the AAQ NEPM standard.								
* Data availability less than 75% for one or more quarters.								
† Monitoring was conducted using TEOM Model 1405DF instrumentation fitted with FDMS until 19 May 2025, and a Teledyne API Model T640X monitor thereafter.								
AAQ NEPM standard for PM ₁₀ : 50 µg/m ³ (1-day average).								
AAQ NEPM goal for PM ₁₀ : standard not to be exceeded (excluding exceptional events).								

Table 53. Percentiles of daily 1-day average PM₁₀ concentrations at Mountain Creek (2001-2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
2001	47.9*	1	50.8	<i>i.d.</i>	39.9	38.1	27.2	23.8
2002	88.2*	8	146.9	19.1	76.0	56.3	36.6	28.1
2003	99.5	1	69.0	15.1	37.0	32.4	27.4	22.4
2004	96.7	1	66.6	15.4	39.2	34.6	29.1	23.3
2005	95.9	2	62.9	14.5	37.6	29.7	24.4	20.3
2006	98.9	0	39.8	14.6	33.3	28.4	23.9	20.9
2007	98.9	0	41.9	14.6	34.4	31.1	24.0	21.1
2008	93.4	1	53.3	15.8	42.4	35.3	27.6	23.4
2009	97.5	8	863.8	20.2	116.25	63.0	35.6	24.7
2010	97.0	0	33.7	13.1	25.2	23.8	21.3	18.9
2011	97.0	0	49.5	13.2	29.5	28.3	21.7	19.3
2012	95.1	1	57.1	13.7	37.8	31.1	24.7	20.9
2013	98.6	1	78.1	15.8	38.7	30.6	26.6	24.0
2014	97.8	1	59.5	14.5	32.8	28.4	25.1	21.2
2015	98.4	0	44.8	13.8	29.6	26.6	21.8	19.5
2016	97.5	0	38.8	16.0	31.7	28.3	25.6	23.0
2017	96.7	0	37.5	17.5	34.7	31.0	28.8	25.2
2018	98.4	5	94.6	19.6	65.5	39.7	32.7	29.2
2019	98.9	15	259.1	22.9	80.9	66.0	47.1	36.0
2020	98.6	3	77.6	16.0	49.2	33.0	27.1	23.4
2021	99.7	0	27.8	14.9	26.5	25.6	22.7	20.0
2022	99.7	0	36.9	15.5	33.9	30.7	25.7	21.9
2023	100.0	0	45.0	14.9	31.5	27.4	23.1	20.5
2024	100.0	0	32.4	14.5	28.6	26.2	22.8	20.1
2025	98.1	0	42.0	14.0	28.0	27.3	23.6	21.1

Bold text indicates a value greater than the AAQ NEPM standard.

* Data availability less than 75% for one or more quarters. Years shown in italics have less than 75% annual data availability.
i.d. = insufficient data to calculate value.

Monitoring by TEOM Model 1400 instrumentation from 2001 to 3 February 2021. Monitoring by TAPI T640X optical aerosol spectrometer from 4 February 2021.

AAQ NEPM standards for PM₁₀: 50 µg/m³ (1-day average); 25 µg/m³ (1-year average).

AAQ NEPM goal for PM₁₀ (prior to 2016): 1-year standard not to be exceeded; 1-day standard exceeded on no more than five days per year.

AAQ NEPM goal for PM₁₀ (from 2016): standards not to be exceeded (excluding exceptional events for 1-day standard).

Table 54. Percentiles of daily 1-day average PM₁₀ concentrations at Rocklea (1998–2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
1998	91.2	0	32.8	17.0	30.6	28.1	25.4	23.3
1999	96.4	1	56.7	15.7	31.4	27.9	25.4	22.2
2000	92.6	0	47.5	17.8	40.5	37.1	31.4	26.5
2001	97.3	1	70.8	16.8	34.8	32.1	26.5	24.2
2002	99.2	8	177.3	20.2	82.2	49.0	32.9	29.6
2003	98.1	2	119.9	16.4	40.4	33.4	28.3	24.2
2004	92.6	0	47.3	19.1	40.8	38.1	33.3	28.2
2005	89.9	2	52.6	16.9	39.8	36.2	27.0	23.3
2006	96.2	0	39.5	16.1	31.5	29.4	26.8	23.8
2007	99.2	1	53.4	17.5	39.1	36.6	31.7	26.3
2008	95.1	1	86.8	16.7	39.6	36.4	28.9	24.8
2009	97.3	9	1033.4	25.2	109.2	64.6	40.3	35.1
2010	96.7	0	38.0	16.7	30.5	27.8	25.3	22.6
2011	2.7*	0	20.4	<i>i.d.</i>	20.3	20.2	19.9	19.3
2012	56.3*	0	41.0	<i>i.d.</i>	34.8	34.6	26.7	22.8
2013	85.8	0	32.2	14.2	29.8	27.3	24.0	21.0
2014	94.8	0	31.6	14.0	30.4	29.7	23.4	21.1
2015	96.2	0	44.0	14.9	31.1	27.4	24.2	21.5
2016	90.7	0	31.2	15.1	29.5	27.1	24.4	21.7
2017	99.7	0	43.2	14.3	30.2	27.7	25.1	21.0
2018	96.2	5	137.2	15.0	55.2	34.9	27.1	22.7
2019	98.1	16	225.7	19.8	130.1	68.3	49.1	34.7
2020	94.0	2	72.4	13.1	32.0	28.3	21.7	18.6
2021	98.9	0	26.5	10.1	21.1	19.1	17.4	15.2
2022	77.5*	0	30.9	12.8	27.5	25.3	22.9	20.2
2023	100.0	0	37.6	16.5	33.4	31.7	27.2	23.2
2024	97.0	0	40.9	13.7	30.3	27.1	23.2	20.1
2025	98.4	1	50.3	17.4	41.1	38.6	32.5	28.1

Bold text indicates a value greater than the AAQ NEPM standard.

* Data availability less than 75% for one or more quarters. Years shown in italics have less than 75% annual data availability. i.d. = insufficient data to calculate value.

Monitoring by TEOM Model 1400 instrumentation from 1998 to 2008. Monitoring by TEOM Model 1405 instrumentation fitted with FDMS from 2009 to 19 May 2025. Monitoring by TAPI T640X optical aerosol spectrometer from 19 May 2025.

AAQ NEPM standards for PM₁₀: 50 µg/m³ (1-day average); 25 µg/m³ (1-year average).

AAQ NEPM goal for PM₁₀ (prior to 2016): 1-year standard not to be exceeded; 1-day standard exceeded on no more than five days per year.

AAQ NEPM goal for PM₁₀ (from 2016): standards not to be exceeded (excluding exceptional events for 1-day standard).

Table 55. Percentiles of daily 1-day average PM₁₀ concentrations at Springwood (1999–2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
1999	83.3	0	48.3	12.4	26.1	22.4	19.4	16.6
2000	97.5	0	46.3	16.0	41.7	37.2	29.7	23.8
2001	97.3	0	39.0	15.3	33.6	30.4	26.0	21.6
2002	96.2	6	139.6	18.8	88.0	40.8	33.7	28.7
2003	97.0	0	41.2	15.4	33.5	30.7	26.8	22.6
2004	97.3	0	40.3	16.7	36.3	33.0	27.9	24.4
2005	98.9	2	63.6	15.4	40.7	35.3	25.3	22.0
2006	94.2	0	35.1	14.9	31.5	28.4	26.0	22.2
2007	99.2	0	49.3	15.7	43.8	34.9	28.3	23.1
2008	97.3	1	69.0	14.9	38.4	33.4	25.8	21.0
2009	93.7	10	960.0	21.1	104.9	68.3	31.8	28.0
2010	98.1	0	37.1	12.9	25.1	23.6	19.1	17.5
2011	95.9	2	61.2	13.2	26.4	23.6	20.6	17.9
2012	90.2	0	39.2	13.2	30.1	29.5	23.0	20.6
2013	98.4	0	35.4	14.1	31.5	28.8	25.3	22.4
2014	94.5	0	32.7	13.1	29.4	28.6	24.5	19.5
2015	81.9	1	56.1	12.5	30.4	24.2	20.3	17.6
2016	96.2	0	30.6	12.4	26.0	24.6	22.2	18.7
2017	100.0	0	34.4	11.6	29.4	25.0	21.0	19.1
2018	96.4	2	126.2	13.1	48.5	26.9	23.0	20.0
2019	96.4	13	193.5	16.9	108.7	65.1	44.6	30.2
2020	81.4	2	69.1	11.8	41.9	33.8	22.4	18.0
2021	98.1	0	38.3	10.6	23.0	21.7	18.1	16.3
2022	91.2	0	23.7	10.5	21.7	19.6	17.5	15.2
2023	98.9	0	47.6	13.4	34.0	28.6	24.4	20.8
2024	100.0	1	66.1	16.5	44.9	32.8	27.5	23.4
2025	99.2	0	45.0	14.6	31.0	29.6	25.1	21.9

Bold text indicates a value greater than the AAQ NEPM standard.

* Data availability less than 75% for one or more quarters.

i.d. = insufficient data to calculate value.

Monitoring by TEOM Model 1400 instrumentation until 25 February 2017. From 25 February 2017 to 13 July 2023, monitoring by TEOM Model 1405 instrumentation fitted with FDMS. Monitoring by TAPI T640X optical aerosol spectrometer from 13 July 2023 onwards.

AAQ NEPM standards for PM₁₀: 50 µg/m³ (1-day average); 25 µg/m³ (1-year average).

AAQ NEPM goal for PM₁₀ (prior to 2016): 1-year standard not to be exceeded; 1-day standard exceeded on no more than five days per year.

AAQ NEPM goal for PM₁₀ (from 2016): standards not to be exceeded (excluding exceptional events for 1-day standard).

Table 56. Percentiles of daily 1-day average PM₁₀ concentrations at Southport (2018–2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
2018	81.9	4	127.5	15.8	67.9	46.0	31.1	25.7
2019	91.2	19	161.9	19.8	109.0	84.7	55.5	36.6
2020	98.4	1	81.6	13.4	38.0	28.6	25.3	21.6
2021	94.8	0	29.8	10.8	23.2	20.2	18.1	16.0
2022	96.4	0	35.4	9.8	23.3	20.7	17.3	14.8
2023	99.2	0	45.5	13.2	32.2	28.7	24.4	20.6
2024	100.0	0	30.8	14.8	28.5	27.1	24.4	22.1
2025	97.3	0	47.7	14.3	32.6	29.3	25.2	22.0

Bold text indicates a value greater than the AAQ NEPM standard.

Monitoring by TEOM Model 1405 instrumentation fitted with FDMS from 2018 until 11 July 2023. Monitoring by TAPI T640X optical aerosol spectrometer from 11 July 2023.

AAQ NEPM standards for PM₁₀: 50 µg/m³ (1-day average); 25 µg/m³ (1-year average).

AAQ NEPM goal for PM₁₀ (prior to 2016): 1-year standard not to be exceeded; 1-day standard exceeded on no more than five days per year.

AAQ NEPM goal for PM₁₀ (from 2016): standards not to be exceeded (excluding exceptional events for 1-day standard).

Table 57. Percentiles of daily 1-day average PM₁₀ concentrations at Raceview (2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
2025	97.3	4	69.1	20.4	50.1	46.0	36.1	30.9

Bold text indicates a value greater than the AAQ NEPM standard.

Monitoring by TAPI T640X optical aerosol spectrometer.

AAQ NEPM standards for PM₁₀: 50 µg/m³ (1-day average); 25 µg/m³ (1-year average).

AAQ NEPM goal for PM₁₀ (prior to 2016): 1-year standard not to be exceeded; 1-day standard exceeded on no more than five days per year.

AAQ NEPM goal for PM₁₀ (from 2016): standards not to be exceeded (excluding exceptional events for 1-day standard).

Table 58. Percentiles of daily 1-day average PM₁₀ concentrations at Toowoomba (2022-2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
2022	90.7	1	53.9	12.1	24.3	23.9	19.4	17.5
2023	96.7	0	40.6	14.2	33.6	28.3	22.6	19.9
2024	99.2	0	38.1	12.9	27.7	26.7	22.6	19.7
2025	97.8	0	45.3	12.0	34.6	28.7	22.2	18.0

Bold text indicates a value greater than the AAQ NEPM standard.

Monitoring by TAPI T640X optical aerosol spectrometer.

AAQ NEPM standards for PM₁₀: 50 µg/m³ (1-day average); 25 µg/m³ (1-year average).

AAQ NEPM goal for PM₁₀ (prior to 2016): 1-year standard not to be exceeded; 1-day standard exceeded on no more than five days per year.

AAQ NEPM goal for PM₁₀ (from 2016): standards not to be exceeded (excluding exceptional events for 1-day standard).

Table 59. Percentiles of daily 1-day average PM₁₀ concentrations at Maryborough (2022-2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
2022	17.5*	0	42.9	<i>i.d.</i>	42.9	42.9	32.7	27.1
2023	99.5	0	36.4	15.0	31.2	27.7	24.7	21.5
2024	95.6	0	33.8	14.4	28.7	24.8	21.2	20.1
2025	99.2	0	41.3	14.0	32.4	28.0	23.5	20.2

* Data availability less than 75% for one or more quarters. Years shown in italics have less than 75% annual data availability.

i.d. = insufficient data to calculate value.

Monitoring by TAPI T640X optical aerosol spectrometer.

AAQ NEPM standards for PM₁₀: 50 µg/m³ (1-day average); 25 µg/m³ (1-year average).

AAQ NEPM goal for PM₁₀ (prior to 2016): 1-year standard not to be exceeded; 1-day standard exceeded on no more than five days per year.

AAQ NEPM goal for PM₁₀ (from 2016): standards not to be exceeded (excluding exceptional events for 1-day standard).

Table 60. Percentiles of daily 1-day average PM₁₀ concentrations at South Gladstone (2000-2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
2000	63.1*	4	65.2	<i>i.d.</i>	54.8	44.5	32.0	28.2
2001	95.6	4	66.7	17.7	47.4	35.9	30.4	25.8
2002	98.1	5	197.1	18.2	75.1	46.0	33.6	25.8
2003	96.4	0	41.3	15.5	36.1	33.4	26.2	23.6
2004	99.7	0	42.7	16.3	34.5	29.1	25.3	22.4
2005	97.8	4	196.7	16.9	48.5	32.7	26.4	22.8
2006	98.4	1	54.6	16.7	37.0	34.1	27.9	23.1
2007	96.7	0	38.8	15.7	29.5	28.3	25.1	22.7
2008	93.7	2	65.6	17.0	42.3	36.8	29.5	25.5
2009	83.0*	7	252.3	23.2	80.8	54.1	38.1	29.9
2010	78.4*	0	35.6	16.5	32.1	30.3	26.5	23.5
2011	76.7*	3	136.7	14.0	40.7	32.1	27.6	23.2
2012	88.5*	1	63.0	14.6	31.8	28.4	25.1	21.9
2013	95.3	0	37.6	16.8	30.3	28.8	25.5	23.0
2014	95.1	0	49.3	16.2	34.4	30.3	27.9	23.5
2015	93.4	0	31.5	12.9	26.6	25.9	22.0	19.8
2016	97.8	0	32.1	14.5	27.6	25.8	23.3	21.9
2017	92.1	0	40.2	13.9	27.3	25.3	21.6	19.5
2018	94.2	5	80.3	13.9	70.0	42.6	25.4	22.0
2019	97.3	10	130.4	15.9	70.8	56.9	36.9	26.6
2020	97.5	0	32.3	13.0	31.0	29.5	25.0	19.5
2021	97.0	0	27.5	12.1	25.0	23.2	19.4	17.9
2022	91.2	0	24.9	11.0	24.0	20.1	18.6	16.2
2023	99.5	1	106.6	18.0	42.9	38.8	30.5	25.9
2024	100	1	51.5	16.1	36.1	29.4	25.4	22.5
2025	100.0	1	92.2	16.0	39.1	32.8	27.1	24.3

Bold text indicates a value greater than the AAQ NEPM standard.

* Data availability less than 75% for one or more quarters. Years shown in italics have less than 75% annual data availability.

i.d. = insufficient data to calculate value.

Monitoring by TEOM Model 1400 instrumentation from 2000 until 2012. Monitoring by TEOM Model 1405 instrumentation fitted with FDMS from 2012 to 2023. Monitoring by TAPI T640X optical aerosol spectrometer from 2024.

AAQ NEPM standards for PM₁₀: 50 µg/m³ (1-day average); 25 µg/m³ (1-year average).

AAQ NEPM goal for PM₁₀ (prior to 2016): 1-year standard not to be exceeded; 1-day standard exceeded on no more than five days per year.

AAQ NEPM goal for PM₁₀ (from 2016): standards not to be exceeded (excluding exceptional events for 1-day standard).

Table 61. Percentiles of daily 1-day average PM₁₀ concentrations at West Mackay (1999-2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
1999	93.2	1	50.4	17.3	37.6	32.2	27.7	25.6
2000	98.9	2	51.6	18.9	48.4	43.0	34.0	29.9
2001	98.6	2	52.6	22.0	48.5	42.8	37.9	33.5
2002	98.6	5	475.4	24.6	51.2	46.4	37.4	33.1
2003	92.3	7	85.0	21.5	53.2	49.1	38.9	32.2
2004	97.3	0	45.3	20.7	39.6	37.7	33.6	29.6
2005	97.0	7	146.0	22.0	105.1	52.6	36.3	31.1
2006	95.6	1	106.0	19.8	41.5	36.2	31.7	28.4
2007	95.6	2	61.1	21.6	49.1	46.1	38.5	33.1
2008	98.4	9	94.0	23.6	61.4	53.1	43.9	36.4
2009	97.5	18	514.8	28.6	202.6	89.8	50.9	40.8
2010	83.0*	0	44.0	18.5	41.4	35.8	30.7	27.1
2011	92.9	1	65.8	19.9	41.8	39.4	36.2	30.2
2012	98.9	1	64.9	17.8	40.0	37.4	27.6	24.3
2013	96.4	0	42.4	18.5	36.4	30.1	26.4	24.5
2014	91.2	0	34.3	18.2	29.0	27.9	25.2	24.0
2015	91.8	0	46.5	22.0	41.9	37.8	34.1	29.5
2016	97.5	0	44.5	19.8	34.4	33.1	28.4	27.0
2017	90.4	3	69.0	21.6	45.4	42.4	37.0	32.7
2018	94.5	5	127.3	22.4	54.9	44.2	35.9	29.7
2019	98.1	10	238.5	24.1	85.3	75.6	36.3	31.0
2020	100.0	0	39.4	17.0	31.8	30.0	25.4	23.7
2021	100.0	0	43.5	16.8	34.5	28.1	25.2	22.8
2022	98.9	0	33.9	16.7	28.2	27.3	23.4	22.3
2023	96.7	0	48.6	18.3	34.7	33.0	27.8	24.2
2024	99.7	0	35.6	17.2	30.1	27.5	25.6	23.4
2025	99.5	2	53.5	17.9	36.1	29.4	26.9	24.1

Bold text indicates a value greater than the AAQ NEPM standard.

* Data availability less than 75% for one or more quarters.

Monitoring by TEOM Model 1400 instrumentation from 1999 until 14 October 2019. Monitoring by TAPI T640X optical aerosol spectrometer from 14 October 2019.

AAQ NEPM standards for PM₁₀: 50 µg/m³ (1-day average); 25 µg/m³ (1-year average).

AAQ NEPM goal for PM₁₀ (prior to 2016): 1-year standard not to be exceeded; 1-day standard exceeded on no more than five days per year.

AAQ NEPM goal for PM₁₀ (from 2016): standards not to be exceeded (excluding exceptional events for 1-day standard).

Table 62. Percentiles of daily 1-day average PM₁₀ concentrations at North Ward (2018–2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
2018	94.5	0	42.3	15.0	37.6	26.8	23.5	20.4
2019	94.0	8	277.4	20.2	79.9	56.1	34.7	26.6
2020	92.3	0	35.6	16.2	32.7	30.6	26.7	23.7
2021	100.0	1	60.0	16.3	31.1	30.1	25.9	23.4
2022	100.0	0	41.1	15.2	28.7	26.8	24.2	21.4
2023	98.6	0	47.3	16.3	34.5	29.8	27.2	22.8
2024	96.5	0	39.9	15.6	29.6	27.0	24.1	22.1
2025	100.0	1	57.0	15.6	40.9	32.3	25.2	22.8

Bold text indicates a value greater than the AAQ NEPM standard.

Monitoring by TAPI T640X optical aerosol spectrometer.

AAQ NEPM standards for PM₁₀: 50 µg/m³ (1-day average); 25 µg/m³ (1-year average).

AAQ NEPM goal for PM₁₀ (prior to 2016): 1-year standard not to be exceeded; 1-day standard exceeded on no more than five days per year.

AAQ NEPM goal for PM₁₀ (from 2016): standards not to be exceeded (excluding exceptional events for 1-day standard).

Table 63. Percentiles of daily 1-day average PM₁₀ concentrations at Woree (2023–2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
2023	78.9*	0	32.2	15.2	30.8	26.6	22.8	19.8
2024	100.0	1	53.2	15.6	35.1	30.7	23.1	21.4
2025	99.7	4	64.4	18.6	50.3	45.9	37.2	27.6

Bold text indicates a value greater than the AAQ NEPM standard.

* Data availability less than 75% for one or more quarters.

Monitoring by TAPI T640X optical aerosol spectrometer.

AAQ NEPM standards for PM₁₀: 50 µg/m³ (1-day average); 25 µg/m³ (1-year average).

AAQ NEPM goal for PM₁₀ (prior to 2016): 1-year standard not to be exceeded; 1-day standard exceeded on no more than five days per year.

AAQ NEPM goal for PM₁₀ (from 2016): standards not to be exceeded (excluding exceptional events for 1-day standard).

Table 64. Percentiles of daily 1-day average PM₁₀ concentrations at The Gap (2009–2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
2009	63.3*	19	508.5	<i>i.d.</i>	283.6	135.6	67.8	45.8
2010	75.1*	0	32.1	8.9	25.7	23.9	18.8	15.8
2011	87.4*	13	124.0	17.3	91.2	71.5	42.6	32.4
2012	99.2	16	74.5	19.5	59.3	56.7	49.2	38.8
2013	79.7*	13	154.1	23.1	137.0	67.7	45.9	37.5
2014	96.7	12	153.7	20.4	80.0	57.7	43.4	33.6
2015	98.1	6	153.3	19.5	56.9	50.0	39.5	31.5
2016	95.6	1	350.8	16.8	43.3	41.1	31.5	26.5
2017	98.1	3	89.7	18.2	43.3	37.9	32.3	27.6
2018	96.7	15	389.9	23.9	124.2	84.7	47.3	38.4
2019	96.2	33	390.5	29.5	79.9	56.1	34.7	26.6
2020	98.6	14	184.2	20.2	70.3	58.1	48.5	32.7
2021	98.9	6	153.5	18.4	75.1	48.3	35.2	28.5
2022	98.4	1	52.1	13.4	37.4	31.3	24.1	20.5
2023	100.0	9	76.9	17.0	64.1	56.1	33.8	26.0
2024	100.0	7	81.8	15.4	54.8	44.8	29.6	24.4
2025	93.7	1	54.9	14.0	32.9	30.5	27.0	23.9

Bold text indicates a value greater than the AAQ NEPM standard.

* Data availability less than 75% for one or more quarters. Years shown in italics have less than 75% annual data availability.
i.d. = insufficient data to calculate value.

Monitoring by TEOM Model 1400 instrumentation from 2009 until 23 May 2021. Monitoring by TAPI T640X optical aerosol spectrometer from 23 May 2021.

AAQ NEPM standards for PM₁₀: 50 µg/m³ (1-day average); 25 µg/m³ (1-year average).

AAQ NEPM goal for PM₁₀ (prior to 2016): 1-year standard not to be exceeded; 1-day standard exceeded on no more than five days per year.

AAQ NEPM goal for PM₁₀ (from 2016): standards not to be exceeded (excluding exceptional events for 1-day standard).

PM_{2.5}Table 65. 2025 percentiles of daily 1-day average PM_{2.5} concentrations

Region/performance monitoring station	Data availability (% of days)	Maximum (ppm)	Percentiles (ppm)					
			99 th	98 th	95 th	90 th	75 th	50 th
South East Queensland								
North Coast sub-region								
Mountain Creek	98.1	13.8	11.1	10.0	8.1	7.5	6.1	4.5
Brisbane sub-region								
Rocklea [†]	98.4	19.4	15.3	13.4	11.2	9.8	8.0	6.1
Springwood	99.2	21.9	13.9	11.2	9.6	8.1	6.3	4.7
Gold Coast sub-region								
Southport	97.3	21.0	12.5	11.3	9.1	7.5	5.9	4.3
Ipswich sub-region								
Raceview	97.3	24.8	17.9	14.1	11.7	10.4	8.2	6.3
Toowoomba								
Toowoomba	97.8	31.2	19.7	15.9	10.3	8.2	5.5	4.1
Maryborough – Hervey Bay								
Maryborough	99.2	29.7	19.2	15.7	11.3	8.3	6.2	4.7
Gladstone								
South Gladstone	100.0	65.0	16.2	11.8	8.8	7.6	6.0	4.7
Rockhampton								
West Rockhampton	28.8	49.5	17.1	16.5	14.7	12.0	8.8	6.9
Mackay								
West Mackay	99.5	33.4	16.2	14.5	10.3	9.0	7.6	6.1
Townsville								
North Ward	100.0	25.0	19.7	12.8	10.5	8.5	6.8	5.7
Cairns								
Woree	99.7	31.0	17.2	12.2	9.7	7.8	6.3	5.2
Mount Isa								
The Gap	93.7	30.2	16.5	15.5	13.3	9.3	5.8	4.0
Bold text indicates a value greater than the AAQ NEPM standard.								
* Data availability less than 75% for one or more quarters.								
[†] Monitoring was conducted using TEOM Model 1405DF instrumentation fitted with FDMS until 19 May 2025, and a TAPI T640X optical aerosol spectrometer thereafter.								
AAQ NEPM standard for PM _{2.5} (until 2024): 25 µg/m ³ (1-day average).								
AAQ NEPM standard for PM _{2.5} (from 2025): 20 µg/m ³ (1-day average).								
AAQ NEPM goal for PM _{2.5} : 1-day standard not to be exceeded (excluding exceptional events).								

Table 66. Percentiles of daily 1-day average PM_{2.5} concentrations at Mountain Creek (2021-2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
2021	90.1	0	17.3	5.7	11.5	10.7	8.7	8.1
2022	99.7	1	21.0	6.0	12.0	11.6	10.2	8.7
2023	100.0	2	22.6	6.0	17.5	12.3	10.0	8.6
2024	100.0	0	14.3	5.7	12.1	11.0	9.5	8.2
2025	98.1	0	13.8	5.0	11.1	10.0	8.1	7.5
Bold text indicates a value greater than the AAQ NEPM standard. Monitoring by TAPI T640X optical aerosol spectrometer. AAQ NEPM standards for PM_{2.5}(until 2024): 25 µg/m³ (1-day average); 8 µg/m³ (1-year average). AAQ NEPM standard for PM_{2.5} (from 2025): 20 µg/m³ (1-day average); 7 µg/m³ (1-year average). AAQ NEPM goal for PM_{2.5}: standards not to be exceeded (excluding exceptional events for 1-day standard).								

Table 67. Percentiles of daily 1-day average PM_{2.5} concentrations at Rocklea (1998–2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
1998	80.8*	0	16.1	3.5	11.1	9.2	7.7	6.0
1999	88.8*	0	14.5	5.0	13.3	12.4	10.3	8.3
2000	95.6	5	37.4	5.8	20.2	17.7	13.3	10.9
2001	98.6	4	95.4	5.5	18.4	17.1	12.3	9.2
2002	96.4	5	45.3	6.1	22.0	17.1	12.8	10.9
2003	87.7*	3	34.7	5.1	23.3	13.9	10.6	8.6
2004	93.7	16	32.9	6.5	28.7	24.4	17.9	11.6
2005	90.1*	0	15.3	4.6	13.0	12.2	9.6	8.1
2006	95.3	0	14.2	4.1	13.7	11.1	8.6	7.1
2007	99.7	2	20.5	4.4	17.6	13.5	10.6	8.5
2008	95.3	0	11.6	3.8	9.8	9.5	7.8	6.9
2009	92.6	25	163.6	10.9	34.3	25.7	21.5	18.0
2010	96.7	2	23.2	8.2	17.4	15.3	13.6	12.0
2011	2.7*	0	8.8	<i>i.d.</i>	8.8	8.8	8.8	8.8
2012	56.3*	3	23.7	<i>i.d.</i>	22.8	16.7	13.9	11.3
2013	85.8	0	17.2	6.6	16.4	14.7	12.0	10.3
2014	94.8	2	21.9	5.8	19.1	15.5	13.0	9.6
2015	96.2	1	20.3	7.3	16.6	15.8	13.5	11.5
2016	90.7	0	19.9	6.5	16.7	15.2	13.4	10.7
2017	99.7	3	28.9	7.3	19.5	17.3	13.8	11.9
2018	96.2	5	34.7	6.4	23.5	16.0	14.0	11.1
2019	98.1	23	108.6	8.7	43.0	37.3	24.7	15.6
2020	94.0	3	22.6	6.0	18.5	16.4	11.4	9.3
2021	98.4	0	17.9	4.6	11.8	10.4	9.2	7.6
2022	77.8*	0	17.5	6.1	16.0	14.9	13.2	10.7
2023	100.0	2	24.6	8.0	17.4	16.3	15.3	12.6
2024	97.0	1	22.3	6.2	18.5	17.7	12.6	9.8
2025	98.4	0	19.4	6.5	15.3	13.4	11.2	9.8

Bold text indicates a value greater than the AAQ NEPM standard.

* Data availability less than 75% for one or more quarters. Years shown in italics have less than 75% annual data availability.

i.d. = insufficient data to calculate value.

Monitoring by TEOM Model 1400 instrumentation in accordance with Technical Paper on Monitoring for Particles as PM_{2.5} from 1998 to 2008. Monitoring by TEOM Model 1405 instrumentation fitted with FDMS from 2009 to 19 May 2025.

Monitoring by TAPI T640X optical aerosol spectrometer from 19 May 2025 onwards.

AAQ NEPM standards for PM_{2.5} (until 2024): 25 µg/m³ (1-day average); 8 µg/m³ (1-year average).

AAQ NEPM standard for PM_{2.5} (from 2025): 20 µg/m³ (1-day average); 7 µg/m³ (1-year average).

AAQ NEPM goal for PM_{2.5}: standards not to be exceeded (excluding exceptional events for 1-day standard).

Table 68. Percentiles of daily 1-day average PM_{2.5} concentrations at Springwood (1999-2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
1999	82.7*	1	22.3	4.3	12.9	11.8	8.7	7.1
2000	96.7	11	35.4	6.4	28.9	23.6	17.3	13.2
2001	97.0	0	19.4	5.3	18.0	16.2	11.8	9.1
2002	95.9	7	38.9	6.2	28.4	20.1	14.9	11.7
2003	96.2	1	20.5	5.5	16.6	15.4	10.9	9.2
2004	98.4	1	21.7	5.5	16.9	15.4	11.7	9.5
2005	96.4	0	15.2	4.7	14.9	13.3	10.3	8.6
2006	94.0	4	25.5	4.8	20.1	15.3	9.3	7.9
2007	98.4	0	17.8	4.3	14.0	12.0	9.4	7.8
2008	96.7	0	10.9	4.1	9.9	8.8	7.9	6.7
2009	91.5	4	150.6	5.5	25.3	18.0	11.4	9.0
2010	83.3	0	19.4	4.4	12.8	10.7	8.4	7.4
2011	92.9	3	51.2	4.6	29.3	11.5	8.7	6.8
2012	98.1	1	23.7	4.4	15.6	13.3	10.2	7.5
2013	96.7	0	14.2	4.5	11.9	11.6	10.1	8.6
2014	97.3	0	17.6	4.9	14.8	13.1	10.0	8.0
2015	71.0*	0	12.6	<i>i.d.</i>	10.9	9.8	7.5	6.5
2016	95.6	1	20.1	5.7	16.0	13.6	10.9	9.3
2017	100.0	3	23.9	5.4	15.0	13.8	11.6	9.8
2018	96.4	4	24.7	5.9	20.1	17.6	13.5	11.1
2019	96.4	17	101.1	6.7	44.8	31.4	19.3	13.0
2020	91.0	1	28.1	4.7	13.7	12.9	9.9	8.2
2021	98.1	0	15.6	4.8	11.5	10.7	9.8	8.0
2022	91.2	0	17.8	5.6	16.0	12.2	10.5	8.5
2023	98.9	4	24.1	6.2	20.2	16.8	11.9	9.1
2024	100.0	6	50.5	6.6	29.4	16.5	13.3	9.9
2025	99.2	1	21.9	5.3	13.9	11.2	9.6	8.1

Bold text indicates a value greater than the AAQ NEPM standard.

* Data availability less than 75% for one or more quarters. Years shown in italics have less than 75% annual data availability.
i.d. = insufficient data to calculate value.

Monitoring by TEOM Model 1400 instrumentation in accordance with Technical Paper on Monitoring for Particles as PM_{2.5} until 25 February 2017. From 25 February 2017 to 13 July 2023, monitoring by TEOM Model 1405 instrumentation fitted with FDMS. Monitoring by TAPI T640X optical aerosol spectrometer from 13 July 2023 onwards.

AAQ NEPM standards for PM_{2.5} (until 2024): 25 µg/m³ (1-day average); 8 µg/m³ (1-year average).

AAQ NEPM standard for PM_{2.5} (from 2025): 20 µg/m³ (1-day average); 7 µg/m³ (1-year average).

AAQ NEPM goal for PM_{2.5}: standards not to be exceeded (excluding exceptional events for 1-day standard).

Table 69. Percentiles of daily 1-day average PM_{2.5} concentrations at Southport (2018–2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
2018	81.9	10	59.9	6.6	41.5	25.8	15.4	11.6
2019	91.2	23	95.9	8.3	54.0	39.1	26.6	16.2
2020	98.4	2	23.1	5.2	16.7	15.8	11.8	9.4
2021	94.8	1	21.9	4.6	12.2	10.6	8.8	7.6
2022	96.4	0	13.9	4.1	9.8	8.3	7.2	6.2
2023	99.2	1	23.1	5.5	15.8	14.1	11.1	8.5
2024	100.0	0	18.8	5.6	14.9	13.6	9.5	8.5
2025	97.3	1	21.0	4.9	12.5	11.3	9.1	7.5

Bold text indicates a value greater than the AAQ NEPM standard.

Monitoring by TEOM Model 1405 instrumentation fitted with FDMS from 2018 until 11 July 2023. Monitoring by TAPI T640X optical aerosol spectrometer from 11 July 2023.

AAQ NEPM standards for PM_{2.5}(until 2024): 25 µg/m³ (1-day average); 8 µg/m³ (1-year average).

AAQ NEPM standard for PM_{2.5} (from 2025): 20 µg/m³ (1-day average); 7 µg/m³ (1-year average).

AAQ NEPM goal for PM_{2.5}: standards not to be exceeded (excluding exceptional events for 1-day standard).

Table 70. Percentiles of daily 1-day average PM_{2.5} concentrations at Raceview (2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
2025	97.3	2	24.8	6.8	17.9	14.1	11.7	10.4

Bold text indicates a value greater than the AAQ NEPM standard.

Monitoring by TAPI T640X optical aerosol spectrometer.

AAQ NEPM standards for PM_{2.5}(until 2024): 25 µg/m³ (1-day average); 8 µg/m³ (1-year average).

AAQ NEPM standard for PM_{2.5} (from 2025): 20 µg/m³ (1-day average); 7 µg/m³ (1-year average).

AAQ NEPM goal for PM_{2.5}: standards not to be exceeded (excluding exceptional events for 1-day standard).

Table 71. Percentiles of daily 1-day average PM_{2.5} concentrations at Toowoomba (2022-2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
2022	90.7	0	15.1	5.1	12.3	11.5	9.1	7.7
2023	96.7	3	24.0	6.1	19.8	15.1	10.8	9.0
2024	99.2	3	25.2	5.5	16.4	14.6	11.0	9.0
2025	97.8	3	31.2	4.9	19.7	15.9	10.3	8.2

Bold text indicates a value greater than the AAQ NEPM standard.

Monitoring by TAPI T640X optical aerosol spectrometer.

AAQ NEPM standards for PM_{2.5}(until 2024): 25 µg/m³ (1-day average); 8 µg/m³ (1-year average).

AAQ NEPM standard for PM_{2.5} (from 2025): 20 µg/m³ (1-day average); 7 µg/m³ (1-year average).

AAQ NEPM goal for PM_{2.5}: standards not to be exceeded (excluding exceptional events for 1-day standard).

Table 72. Percentiles of daily 1-day average PM_{2.5} concentrations at Maryborough (2022-2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
2022	17.5*	1	28.9	<i>i.d.</i>	28.9	28.9	10.9	8.3
2023	99.5	2	21.4	6.4	18.8	16.2	11.6	9.6
2024	95.6	1	24.4	5.9	13.9	12.3	9.8	8.4
2025	99.2	3	29.7	5.5	19.2	15.7	11.3	8.3

Bold text indicates a value greater than the AAQ NEPM standard.

* Data availability less than 75% for one or more quarters. Years shown in italics have less than 75% annual data availability.

i.d. = insufficient data to calculate value.

Monitoring by TAPI T640X optical aerosol spectrometer.

AAQ NEPM standards for PM_{2.5}(until 2024): 25 µg/m³ (1-day average); 8 µg/m³ (1-year average).

AAQ NEPM standard for PM_{2.5} (from 2025): 20 µg/m³ (1-day average); 7 µg/m³ (1-year average).

AAQ NEPM goal for PM_{2.5}: standards not to be exceeded (excluding exceptional events for 1-day standard).

Table 73. Percentiles of daily 1-day average PM_{2.5} concentrations at South Gladstone (2008-2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
2008	13.9*	0	15.2	<i>i.d.</i>	12.6	12.6	12.3	11.1
2009	83.0*	12	50.8	9.2	29.8	26.9	17.7	13.8
2010	78.4*	0	17.5	6.2	16.3	14.8	12.9	9.9
2011	90.4*	11	126.7	7.6	62.2	33.5	16.4	12.0
2012	88.5*	3	49.6	5.2	21.4	12.1	9.5	7.5
2013	95.3	0	18.3	5.6	16.9	12.1	10.3	8.6
2014	95.1	2	44.0	6.0	14.6	12.8	10.9	9.4
2015	93.4	0	13.8	4.3	10.1	9.4	8.0	6.7
2016	97.8	0	15.9	5.7	14.8	13.2	10.3	8.4
2017	92.1	2	28.6	5.6	13.4	10.6	9.3	8.4
2018	94.2	10	55.0	5.5	37.7	28.2	9.8	8.4
2019	97.3	13	40.2	6.4	31.8	22.9	17.8	12.5
2020	97.5	0	18.1	5.6	16.0	14.4	11.2	9.0
2021	97.0	0	17.1	5.0	12.0	10.8	8.3	7.6
2022	98.4	0	11.7	4.4	10.7	8.5	7.4	6.4
2023	97.0	4	47.4	4.7	15.0	11.0	8.8	7.0
2024	100.0	0	14.2	5.6	11.6	10.4	8.9	8.0
2025	100.0	2	65.0	5.3	16.2	11.8	8.8	7.6

Bold text indicates a value greater than the AAQ NEPM standard.

* Data availability less than 75% for one or more quarters. Years shown in italics have less than 75% annual data availability.

i.d. = insufficient data to calculate value.

Monitoring by TEOM Model 1405 instrumentation fitted with FDMS until 2023, and a TAPI T640X optical aerosol spectrometer from 2024 onwards.

AAQ NEPM standards for PM_{2.5}(until 2024): 25 µg/m³ (1-day average); 8 µg/m³ (1-year average).

AAQ NEPM standard for PM_{2.5} (from 2025): 20 µg/m³ (1-day average); 7 µg/m³ (1-year average).

AAQ NEPM goal for PM_{2.5}: standards not to be exceeded (excluding exceptional events for 1-day standard).

Table 74. Percentiles of daily 1-day average PM_{2.5} concentrations at West Mackay (2019-2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
2019	22.5*	3	32.7	<i>i.d.</i>	32.7	29.4	19.0	17.0
2020	100.0	0	13.7	5.9	12.1	11.1	9.0	8.3
2021	100.0	0	16.0	5.7	11.9	9.2	8.3	7.6
2022	98.9	0	14.9	5.9	10.4	10.0	9.0	8.4
2023	96.7	2	20.6	6.8	16.5	13.7	11.4	9.7
2024	99.7	0	11.7	6.0	11.0	10.8	9.4	8.2
2025	99.5	3	33.4	6.6	16.2	14.5	10.3	9.0

Bold text indicates a value greater than the AAQ NEPM standard.

* Data availability less than 75% for one or more quarters. Years shown in italics have less than 75% annual data availability.

i.d. = insufficient data to calculate value.

Monitoring by TAPI T640X optical aerosol spectrometer.

AAQ NEPM standards for PM_{2.5}(until 2024): 25 µg/m³ (1-day average); 8 µg/m³ (1-year average).

AAQ NEPM standard for PM_{2.5} (from 2025): 20 µg/m³ (1-day average); 7 µg/m³ (1-year average).

AAQ NEPM goal for PM_{2.5}: standards not to be exceeded (excluding exceptional events for 1-day standard).

Table 75. Percentiles of daily 1-day average PM_{2.5} concentrations at North Ward (2018-2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
2018	94.5	2	30.7	5.6	17.6	13.5	9.3	7.6
2019	94.0	6	51.5	7.0	28.3	19.6	13.8	10.3
2020	92.3	0	17.4	5.8	12.8	11.8	9.4	8.1
2021	100.0	0	15.3	5.8	13.7	10.9	9.2	8.1
2022	100.0	2	26.3	5.8	11.0	9.8	8.9	7.9
2023	98.6	2	27.2	6.2	15.4	13.2	10.7	9.1
2024	96.5	0	14.5	5.7	12.8	10.3	8.5	7.8
2025	100.0	3	25.0	6.0	19.7	12.8	10.5	8.5

Bold text indicates a value greater than the AAQ NEPM standard.

Monitoring by TAPI T640X optical aerosol spectrometer.

AAQ NEPM standards for PM_{2.5}(until 2024): 25 µg/m³ (1-day average); 8 µg/m³ (1-year average).

AAQ NEPM standard for PM_{2.5} (from 2025): 20 µg/m³ (1-day average); 7 µg/m³ (1-year average).

AAQ NEPM goal for PM_{2.5}: standards not to be exceeded (excluding exceptional events for 1-day standard).

Table 76. Percentiles of daily 1-day average PM_{2.5} concentrations at Woree (2023-2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
2023	78.9*	0	18.1	6.3	15.9	13.7	11.0	8.8
2024	100.0	2	34.2	5.8	16.6	10.6	8.7	8.0
2025	99.7	3	31.0	5.6	17.2	12.2	9.7	7.8

Bold text indicates a value greater than the AAQ NEPM standard.

Monitoring by TAPI T640X optical aerosol spectrometer.

AAQ NEPM standards for PM_{2.5}(until 2024): 25 µg/m³ (1-day average); 8 µg/m³ (1-year average).

AAQ NEPM standard for PM_{2.5} (from 2025): 20 µg/m³ (1-day average); 7 µg/m³ (1-year average).

AAQ NEPM goal for PM_{2.5}: standards not to be exceeded (excluding exceptional events for 1-day standard).

Table 77. Percentiles of daily 1-day average PM_{2.5} concentrations at The Gap (2023-2025)

Year	Data availability (% of days)	No. of exceedances (days)	Maximum (ppm)	Annual average (ppm)	Percentiles (ppm)			
					99 th	98 th	95 th	90 th
2021	59.7*	2	25.2	<i>i.d.</i>	25.1	18.2	14.6	11.7
2022	98.4	0	14.6	4.1	10.8	9.2	7.8	6.7
2023	100.0	9	50.7	6.3	28.0	25.0	14.7	11.8
2024	100.0	14	65.6	6.1	31.1	26.6	16.6	10.5
2025	93.7	2	30.2	5.0	16.5	15.5	13.3	9.3

Bold text indicates a value greater than the AAQ NEPM standard.

* Data availability less than 75% for one or more quarters. Years shown in italics have less than 75% annual data availability.

i.d. = insufficient data to calculate value.

Monitoring by TAPI T640X optical aerosol spectrometer.

AAQ NEPM standards for PM_{2.5}(until 2024): 25 µg/m³ (1-day average); 8 µg/m³ (1-year average).

AAQ NEPM standard for PM_{2.5} (from 2025): 20 µg/m³ (1-day average); 7 µg/m³ (1-year average).

AAQ NEPM goal for PM_{2.5}: standards not to be exceeded (excluding exceptional events for 1-day standard).

Lead

Table 78. Annual average lead concentrations at The Gap (2009–2025)

Year	Data availability (% of days)	Annual average ($\mu\text{g}/\text{m}^3$)
2009	77.0*	0.13
2010	95.0	0.13
2011	96.7	0.14
2012	91.8	0.10
2013	73.8*	<i>i.d.</i>
2014	91.8*	0.11
2015	100.0	0.09
2016	80.3*	0.06
2017	91.8	0.08
2018	98.3	0.10
2019	98.4	0.10
2020	100.0	0.09
2021	95.1	0.12
2022	100.0	0.10
2023	96.6	0.07
2024	100.0	0.11
2025	96.4	0.11

* Data availability less than 75% for one or more quarters. Years shown in italics have less than 75% annual data availability.
i.d. = insufficient data to calculate value.
 AAQ NEPM standard for lead: $0.5 \mu\text{g}/\text{m}^3$ (1-year average).
 AAQ NEPM goal for lead: standard not to be exceeded.

Table 79. Annual average lead concentrations at Townsville North Ward (2024-2025)

Year	Data availability (% of days)	Annual average ($\mu\text{g}/\text{m}^3$)
2024	100.0	0.01
2025	100.0	0.01

AAQ NEPM standard for lead: $0.5 \mu\text{g}/\text{m}^3$ (1-year average).
 AAQ NEPM goal for lead: standard not to be exceeded.

Section E – Population exposure

Clause 17 of the AAQ NEPM¹¹ requires jurisdictions to evaluate and report population exposures to particles as PM_{2.5} from June 2018, and nitrogen dioxide and photochemical oxidants (as ozone) from June 2021.

Pending the development of a nationally consistent methodology for reporting annual population exposure, DETSI has adopted the following approach to determining population exposure:

Within a region individual sites where the pollutant is monitored (including non-AAQ NEPM reporting sites) are assigned a classification based on Australian/New Zealand Standard 3580.1.1:2016, being:

- peak (e.g. industry, roadside);
- neighbourhood (e.g. residential); or
- background (e.g. rural).

For PM_{2.5} and nitrogen dioxide, the annual average concentrations from individual sites having the same classification are averaged to provide an indicative measure of annual population exposure for locations of this type within the region.

For ozone, the maximum 8-hour average ozone concentration measured across individual sites having the same classification for each day of the year is first determined. These values are then averaged to provide an indicative measure of annual population exposure for locations of this type within the region. The maximum 8-hour average ozone concentration measured during the year at sites of the same classification is also reported.

In some regions, DETSI's current monitoring network locations do not cover all three site classifications.

Queensland had a population of 5.702 million on 31 December 2025¹². In 2025 PM_{2.5} monitoring was undertaken in the following regions: South East Queensland (3.826 million residents), Toowoomba (186,276 residents), Gladstone (69,046 residents), Central Highlands (20,128 residents), Mackay (75,451 residents), Isaac (9,928 residents), Townsville (206,260 residents), Cairns (179,334 residents) and Mount Isa (18,585 residents)¹³.

To provide a spatial representation of population exposure across Queensland, an LGA-based population exposure index was developed. For each monitored region, the indicative annual neighbourhood concentration, calculated as the average across neighbourhood monitoring stations, was assigned to the corresponding LGAs. Concentrations were expressed as a proportion of the relevant AAQ NEPM standard and multiplied by the ABS 2025 estimated resident population to derive a population-weighted score. Scores were then normalised against the highest monitored LGA value and scaled from 0 to 10. The index illustrates the relative distribution of population exposure and should not be interpreted as measured pollutant concentrations or AAQ NEPM compliance.

¹¹ available from www.legislation.gov.au/Details/F2021C00475.

¹² Queensland Government Statistician's Office, Population growth, Queensland, December quarter 2025. Accessed from www.qgso.qld.gov.au/statistics/theme/population/population-estimates/state-territories#current-release-population-growth-qld

¹³ Queensland Government Statistician's Office, Population estimates - Regions - Estimated resident population (ERP). Accessed from www.qgso.qld.gov.au/statistics/theme/population/population-estimates/regions.

PM_{2.5}

During 2025 DETSI undertook continuous PM_{2.5} monitoring at 29 locations in Queensland where annual data availability was greater than 75 per cent. Monitoring was conducted using either a Thermo Scientific TEOM® 1405DF oscillating microbalance or a Teledyne API T640X optical aerosol spectrometer instrument. Both instruments have US EPA equivalent method designation for measurement of PM_{2.5}.

The indicative annual exposure to PM_{2.5} particles for residents in the different location classifications in the nine regions where PM_{2.5} monitoring was conducted during 2025 is summarised in Table 80.

Table 80. Indicative annual population exposure to PM_{2.5} for Queensland regions in 2025.

Region / Classification	Annual average population exposure		Number of monitoring stations	Air monitoring station locations
	µg/m³	% of standard		
South East Queensland				
Peak	5.5	78.0	4	Brisbane CBD [†] , Cannon Hill [†] , South Brisbane [†] , Woolloongabba [†]
Neighbourhood	5.4	77.6	9	Coomera [†] , Deagon [†] , Deception Bay [†] , Raceview [†] , Mountain Creek [†] , Parkwood [†] , Rocklea [†] , Southport [†] , Springwood [†]
Background	5.0	71.3	2	Mutdapilly [†] , North Maclean [†]
Toowoomba				
Neighbourhood	4.9	70.0	1	Toowoomba [†]
Gladstone				
Peak	5.3	75.9	2	Boat Creek [†] , Clinton [†]
Neighbourhood	5.1	72.8	2	Boyne Island [†] , South Gladstone [†]
Background	5.0	71.1	1	Targinie [†]
Central Highlands				
Neighbourhood	5.8	82.7	2	Blackwater [†] , Emerald [†]
Mackay				
Neighbourhood	6.6	94.7	1	West Mackay [†]
Isaac				
Neighbourhood	6.0	85.6	2	Moranbah (Cunningham Way) [†] , Moranbah (Utah Drive) [†]
Townsville				
Neighbourhood	6.0	85.4	1	North Ward [†]
Cairns				
Neighbourhood	5.6	79.9	1	Woree [†]
Mount Isa				
Neighbourhood	5.0	71.0	1	The Gap [†]
† AAQ NEPM performance monitoring site				
‡ Non-AAQ NEPM performance monitoring site				

The spatial distribution of the normalised PM_{2.5} population exposure index across Queensland LGAs is shown in Figure 2. The map was developed using the methodology described in Section E and is intended to illustrate the relative distribution of population exposure across monitored regions.

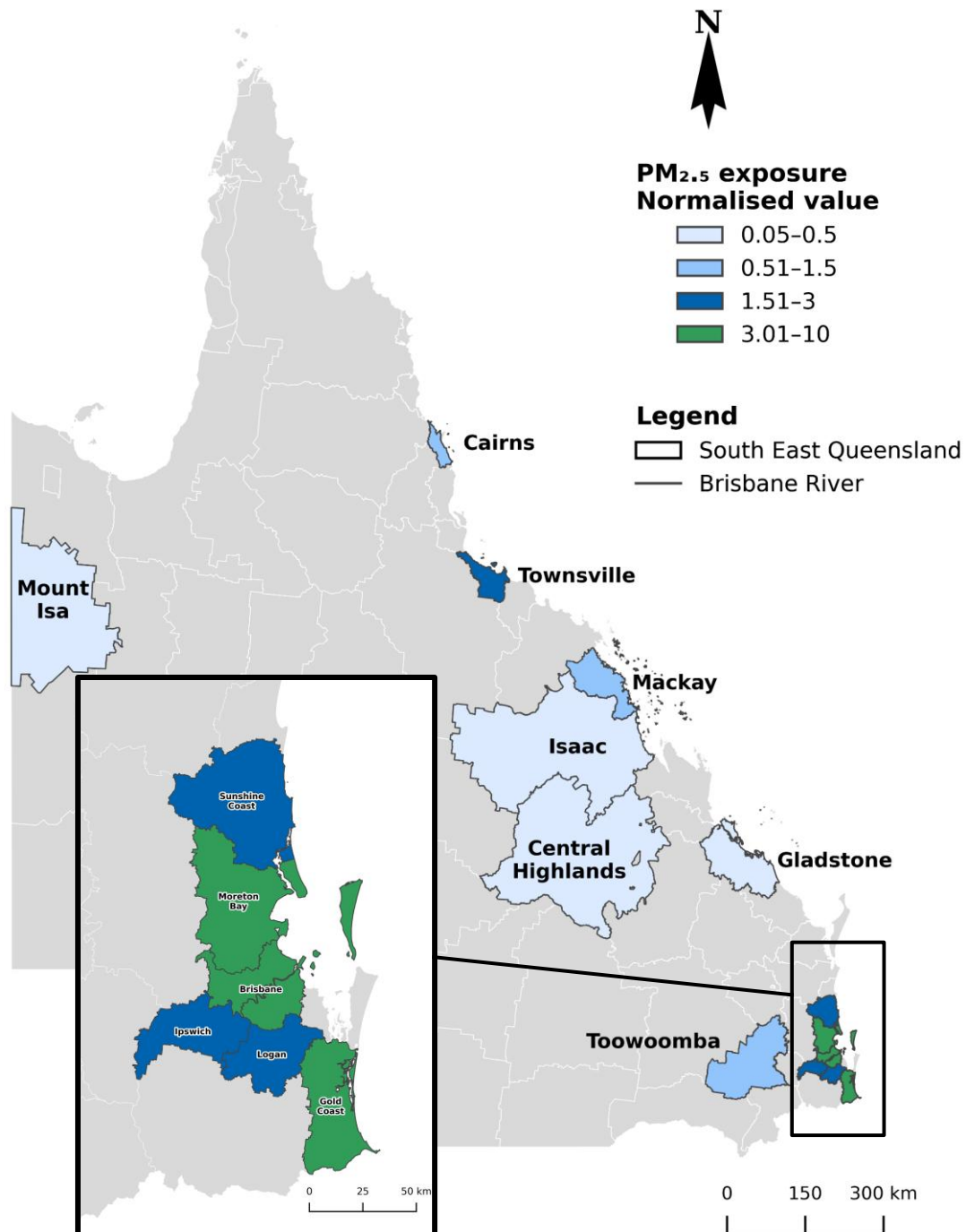


Figure 2. Normalised PM_{2.5} population exposure value across Queensland local government areas in 2025

Nitrogen dioxide

During 2025 DETSI undertook nitrogen dioxide monitoring at 21 locations in Queensland where annual data availability was greater than 75 per cent. At all locations except Memorial Park in Gladstone, monitoring was conducted using a chemiluminescence analyser operated in accordance with Australian Standard AS 3580.5.1. At Memorial Park, monitoring was conducted using a differential optical absorption spectroscopy (DOAS) instrument operated in accordance with Australian/New Zealand Standard AS/NZS 3580.15.

The indicative annual exposure to nitrogen dioxide for residents in the different location classifications in the three regions where nitrogen dioxide monitoring was conducted during 2025 is summarised in Table 81.

Table 81. Indicative annual population exposure to nitrogen dioxide for Queensland regions in 2025.

Region / Classification	Annual average population exposure		Number of monitoring stations	Air monitoring station locations
	ppm	% of standard		
South East Queensland				
Peak	0.01	68.1	4	Cannon Hill [†] , South Brisbane [†] , Parkwood [†] , Woolloongabba [†]
Neighbourhood	0.006	37.1	8	Coomera [†] , Deagon [†] , Deception Bay [†] , Raceview [†] , Mountain Creek [†] , Rocklea [†] , Southport [†] , Springwood [†]
Background	0.003	17.8	2	Mutdapilly [†] , North Maclean [†]
Gladstone				
Peak	0.005	30.1	2	Boat Creek [†] , Clinton [†]
Neighbourhood	0.003	23.0	3	Boyne Island [†] , Memorial Park [†] , South Gladstone [†]
Background	0.003	21.6	1	Targinie [†]
Townsville				
Neighbourhood	0.002	16.6	1	North Ward [†]
† AAQ NEPM performance monitoring site				
† Non-AAQ NEPM performance monitoring site				

The spatial distribution of the normalised nitrogen dioxide population exposure value across Queensland LGAs is shown in Figure 3. The map was developed using the methodology described in Section E and is intended to illustrate the relative distribution of population exposure across monitored regions.

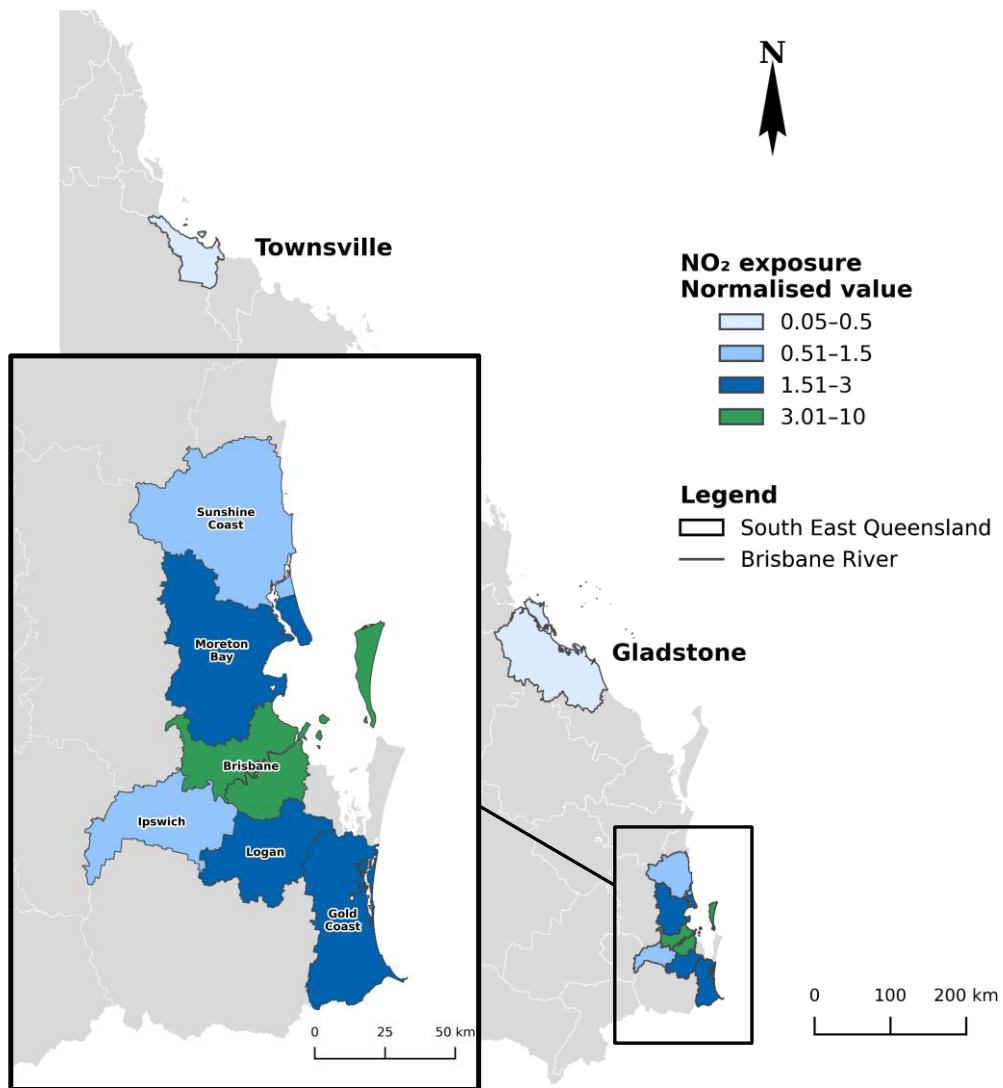


Figure 3. Normalised nitrogen dioxide (NO₂) population exposure value across Queensland local government areas in 2025

Photochemical oxidants (as ozone)

During 2025 DETSI undertook ozone monitoring at 11 locations in Queensland where annual data availability was greater than 75 per cent. At all locations except Memorial Park in Gladstone, monitoring was conducted using a UV-absorption analyser operated in accordance with Australian Standard AS 3580.6.1. At Memorial Park, monitoring was conducted using a differential optical absorption spectroscopy (DOAS) instrument operated in accordance with Australian/New Zealand Standard AS/NZS 3580.15.

The indicative annual and maximum 8-hour exposure to ozone for residents in the different location classifications in the two regions where ozone monitoring was conducted during 2025 is summarised in Table 82.

Table 82. Indicative annual population exposure to ozone for Queensland regions in 2025.

Region / Classification	Average 8-hour population exposure		Maximum 8-hour population exposure		Number of monitoring stations	Air monitoring station locations
	ppm	% of standard	ppm	% of standard		
South East Queensland						
Peak	0.029	44.6	0.057	87.7	1	Cannon Hill†
Neighbourhood	0.033	50.8	0.057	87.7	7	Deagon†, Deception Bay†, Raceview†, Mountain Creek†, Rocklea†, Southport†, Springwood†
Background	0.033	50.8	0.061	93.8	2	Mutdapilly†, North Maclean†
Gladstone						
Neighbourhood	0.020	30.8	0.038	58.5	1	Memorial Park†
† AAQ NEPM performance monitoring site						
† Non-AAQ NEPM performance monitoring site						

The spatial distribution of the normalised ozone population exposure value across Queensland LGAs is shown in Figure 4. The map was developed using the methodology described in Section E and is intended to illustrate the relative distribution of population exposure across monitored regions.

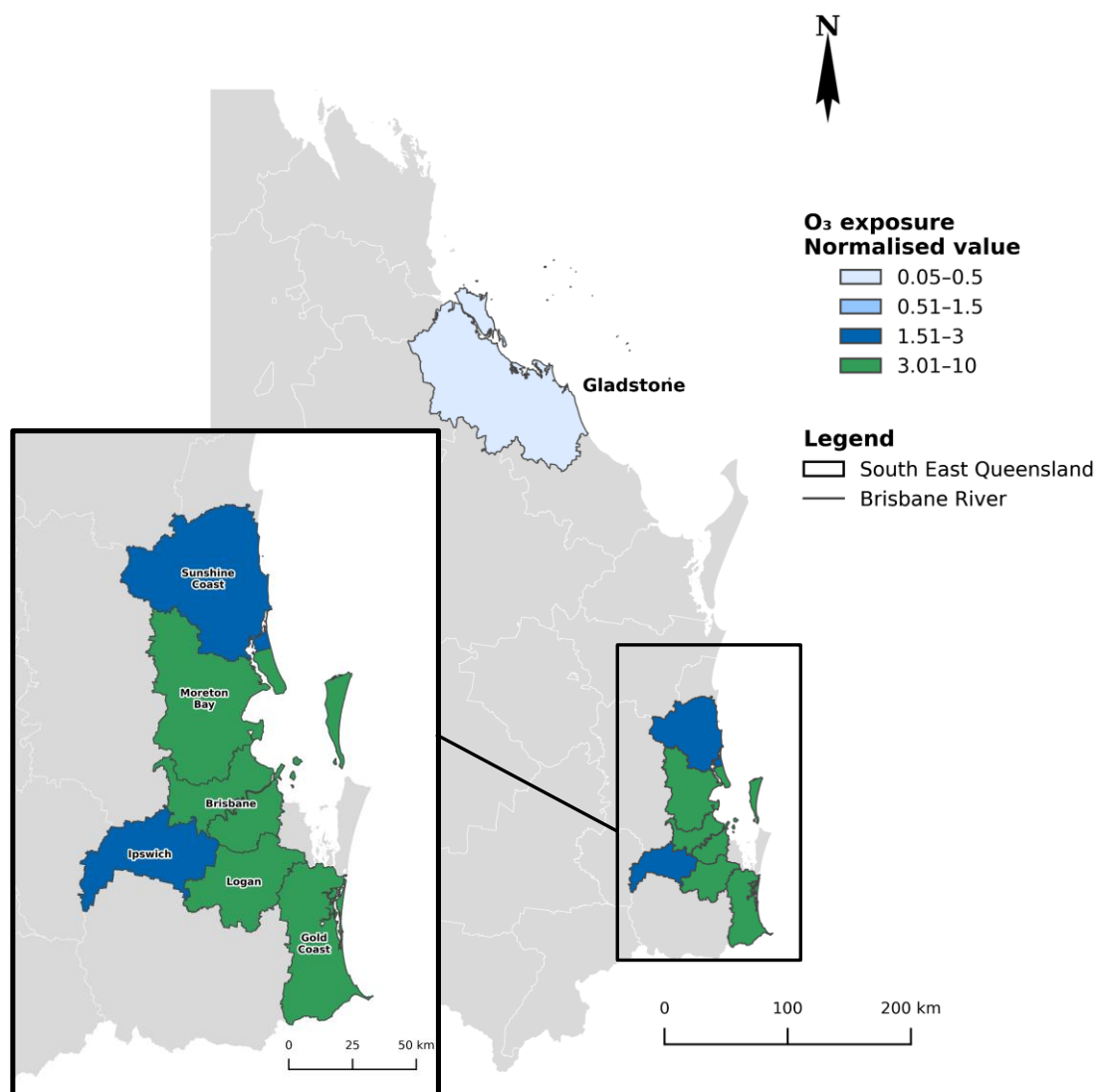


Figure 4. Normalised ozone (O₃) population exposure value across Queensland local government areas in 2025.

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