Annual Report 2025

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Woodside Energy Ltd
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Burrup Ambient Air Quality Monitoring Program
22 July 2026

Annual Report 2025

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Executive summary

This annual report summarises the results of the Burrup Ambient Air Quality Monitoring Program (BAAQMP) for the period 1st January to 31st December 2025. The BAAQMP comprises of three ambient air and meteorological monitoring stations located on the Burrup Peninsula, Dampier North and Karratha.

There were no exceedances of the trigger levels adopted for screening of hourly, 24-hour and annual average measurements of benzene, toluene, ethylbenzene and xylenes (BTEX), nitrogen oxides (NO_x/NO_2/NO) and ozone (O_3) across the year.

Data collection was generally reliable across the program during the reporting period. While benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX), nitrogen oxides (NO_x/NO_2/NO) and ozone (O_3) data capture was intermittently impacted by power interruptions and minor instrument faults at some points during the year, overall data availability met relevant monitoring requirements and was sufficient for assessing compliance and concluding that no exceedances were observed.

1. Introduction

1.1 Background

Woodside Energy Ltd (Woodside) voluntarily established the Burrup Ambient Air Quality Monitoring Program (BAAQMP) during 2008 through to 2011 to gain a better understanding of how the North West Shelf (NWS) project on the Burrup may affect local air quality. The program continued in accordance with the Pluto Liquefied Natural Gas (LNG) development environmental approval requirements, (Ref. requirements of MS757 C11 associated with Pluto Developments), from 2012 to the end of 2015.

In 2019, Woodside reinstated the ambient air quality monitoring program on and around the Burrup. The BAAQMP comprises three air quality monitoring stations. Two monitoring stations were installed during the second quarter of 2019 at Burrup Road and Dampier North. The third station installed in Karratha was commissioned at the beginning of August 2020. The operation of the monitoring stations is sub-contracted by Jacobs to project partner ACOEM.

This annual ambient air quality monitoring report covers the 2025 calendar year of operation under the reinstated monitoring program and includes data for the period 1st January to 31st December 2025 inclusive.

1.2 BAAQMP Monitoring Stations

The locations and installation dates for the BAAQMP air monitoring stations are summarised in **Table 1-1**. The Burrup Road and Dampier North monitoring stations are located on the Burrup Peninsula, within Western Australia's Pilbara region. The Karratha monitoring station is located near Karratha Town Hall, in Karratha (approximately 10 km south east of the Burrup Peninsula). **Figure 1-1** shows the locations of the BAAQMP air monitoring stations.

Table 1-1: Monitoring station locations (MGA Zone 50)

Monitoring Station	Location		Installation	Commissioned
	Easting (m)	Northing (m)		
Burrup Road	476661 E	7721044 N	29 May 2019	31 May 2019
Dampier North	470218 E	7716231 N	1 May 2019	31 May 2019
Karratha	484874 E	7707573 N	28 Jul 2020	1 Aug 2020

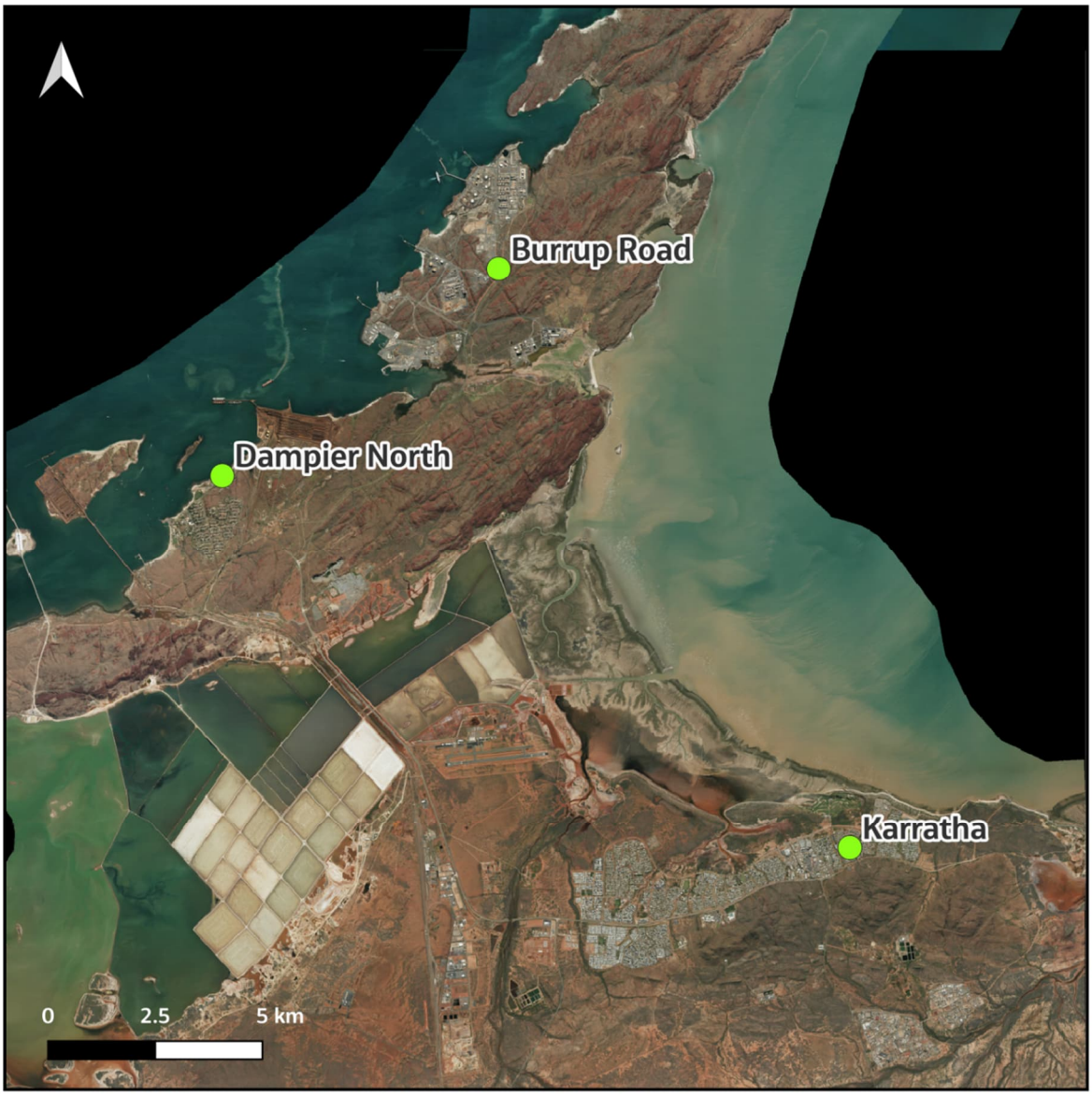

Figure 1-1. BAAQMP air monitoring station locations, within the Pilbara region of WA

1.3 Monitoring Standards and Protocols

1.3.1 Standards overview

Air quality monitoring has been conducted in accordance with relevant Australian Standards and analysed with reference to ambient air quality standards and triggers as summarised in **Table 1-2**.

The National Environment Protection (Ambient Air Quality) Measure (AAQ NEPM) (NEPC, 2021) and the National Environment Protection (Air Toxics) Measure NEPM (AT NEPM) (NEPC, 2011) are the standards applicable for assessing the compliance of air monitoring data in Western Australia. They are short and / or long-term exposure standards set at limits that allow Australian jurisdictions to determine whether human health and well-being is protected.

It is noted that the AAQ NEPM was revised in May 2021; see **Section 1.3.2**.

For benzene, toluene, ethylbenzene and xylene, collectively referred to as BTEX, the shortest-term NEPM standards are 24-hour averages (toluene and xylene). The NEPM standard for benzene is an annual average, and there is no standard for ethylbenzene.

Therefore, in addition to the health based NEPM standards for BTEX, additional criteria from the New South Wales Environment Protection Authority (NSW EPA) have been adopted to assist in assessing the short-term hourly monitoring data. The 'Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales' (NSW EPA, 2022) provides guidance for air quality modelling assessments. In addition to only being applicable in NSW, the guidance document specifically qualifies that the modelling assessment criteria must not be used as limit conditions in environment protection licences. However, the hourly modelling assessment criteria provide useful trigger levels which for the BAAQMP have been utilised for screening of the hourly averaged monitoring data.

Trigger levels for BTEX are included in **Table 1-2**, with 1-hour triggers based on Tables 12 and 13 from NSW EPA (2022) for toxicity (benzene and ethylbenzene) and Table 16 for odour (toluene and xylenes).

Pollutant monitoring equipment has been selected and are operated in accordance with the relevant Australian Standard where applicable. The monitoring for BTEX, representing the volatile organic compounds, uses a continuous analyser, for which there is no Australian Standard method.

Meteorological equipment has been selected to provide data of a quality commensurate with the objectives of the project while minimising ongoing maintenance and costs. Meteorological monitoring includes wind parameters, temperature, humidity and solar radiation at each of the three monitoring sites.

For wind measurements, an ultrasonic wind sensor has been selected due to its low starting threshold, which provides greater detail during calm conditions, and has improved reliability and reduced maintenance requirements due to having no moving parts, especially in harsh environments. While these characteristics were considered desirable for this project, the instrument performance may not be compliant with the relevant Australian Standard (AS) in all wind speed conditions. However, for low wind speeds when the risk of air quality impact can be greater due to poorer dispersion, the ultrasonic sensor exceeds the AS specifications.

While meteorological monitoring equipment is not in full compliance with AS 3580.14 2014 for the wind parameters and solar radiation, the quality of instrumentation and calibration procedures proposed are appropriate to the objectives of the project.

Table 1-2: Ambient air quality monitoring parameters, air quality standards, triggers, and methods

Parameter	Ambient Air Quality Standards and Triggers			Monitoring Method / Australian Standard
	Concentration (ppb)	Averaging Period	Source	
Benzene	9	1 hour	NSW EPA [1]	Gas chromatography Synspec GC955 series manual [2]
	3	Annual	NEPM (Air Toxics)	
Toluene	90	1 hour	NSW EPA[1]	Gas chromatography Synspec GC955 series manual [2]
	1000	24 hours	NEPM (Air Toxics)	
	100	Annual		
Ethylbenzene	1800	1 hour	NSW EPA[1]	Gas chromatography Synspec GC955 series manual [2]
Xylene	40	1 hour	NSW EPA[1]	Gas chromatography Synspec GC955 series manual [2]
	250	24 hours	NEPM (Air Toxics)	
	200	Annual		
Oxides of nitrogen (NOX)	NA			AS/NZS 3580.5.1:2023
Nitrogen dioxide (NO_2)	80	1 hour	NEPM (Ambient Air Quality)	
	15	Annual	NEPM (Ambient Air Quality)	
Nitric oxide (NO)	NA			
Ozone (O_3)	65	8 hours	NEPM (Ambient Air Quality)	AS/NZS 3580.6.1:2023
Ambient temperature	NA			AS/NZS 3580.14:2014
Relative humidity	NA			
Vector wind speed [3]	NA			
Vector wind direction [3]	NA			
Solar radiation	NA			

[1] NSW EPA (2022) guidance is used to assist in interpretation of short-term (1-hour average) monitoring data. It is used for screening purposes and is not an air quality standard.

[2] There is no Australian Standard method for continuous monitoring of BTEX. In the absence of a standard method, the instrument will be operated in accordance with the manufacturer's manual.

[3] Wind speed and direction are monitored using ultrasonic anemometer and may not meet all performance requirements of the Australian Standard.

1.3.2 Changes to Air Quality Standards

In May 2021, the National Environment Protection Council (NEPC) revised the AAQ NEPM (NEPC, 2021) and amended the air quality standards for sulphur dioxide (SO_2), NO_2, and O_3.

While all jurisdictions have agreed to this action, decisions about the way in which NEPMs are implemented are made by each jurisdiction individually and Western Australia has not yet prescribed a change to its air quality standards used for the assessment of specific projects.

It is noted that the WA Department of Water and Environmental Regulation released a draft air emissions guideline (WA DWER, 2019) which lists proposed ambient air quality guideline values (AGV) for pollutants i.e. maximum ground level concentrations for air pollutants, which are based on Department of Health and the NSW EPA publications.

The NSW Government (NSW EPA, 2022) released the updated 'Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales' in August 2022 which adopts the revised NEPM standards. In March 2026 NSW EPA released an updated draft version of the Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales' for comment. The following changes to impact assessment criteria for BTEX are proposed as part of the 2026 update:

- Benzene: new annual impact assessment criteria of 0.5 ppb proposed.
- Ethylbenzene: Increase in 1-hour impact assessment criteria from 1,800 to 5,000 ppb and introduction of a new annual criterion of 230 ppb.

No changes are proposed for toluene or xylene.

Noting that the 2022 version remains in draft form, guidance from the approved 2022 version has still been considered in this report.

Recent air quality reports published by the Western Australian government including the 'Study of the Cumulative Impacts of Air Emissions in the Murujuga Airshed' (Ramboll, 2022), and the '2022 Western Australian air monitoring report' (WA DWER, 2024), report air quality using the amended 2021 AAQ NEPM air quality standards. For this report, the amended 2021 AAQ NEPM standards have been adopted to maintain consistency with Commonwealth legislation and to reflect the Western Australian government's current reporting methods. Thus the 2022 amended version of EPA NSW's 'Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales' is also referenced instead of the 2016 version. The amendments to the AAQ NEPM are summarised in **Table 1-3** and have been adopted for the relevant pollutants of interest as listed above in **Table 1-2**.

Table 1-3: Amendments to Ambient Air Quality NEPM

Pollutant	Averaging Period	Units	Ambient Air Quality NEPM (2016)		Ambient Air Quality NEPM (2021)	
			Maximum concentration standard	Maximum allowable exceedances	Revised maximum concentration standard	Revised Maximum allowable exceedances
Carbon monoxide	8 hours	ppm	9	1 day a year	No change	None
Nitrogen dioxide	1 hour	ppb	120	1 day a year	80	None
	1 year	ppb	30	None	15	None
Photochemical oxidants (as ozone)	1 hour	ppb	100	1 day a year	Deleted	
	4 hour	ppb	80	1 day a year	Deleted	
	8 hour	ppb	N/A	N/A	65	None

Pollutant	Averaging Period	Units	Ambient Air Quality NEPM (2016)		Ambient Air Quality NEPM (2021)	
			Maximum concentration standard	Maximum allowable exceedances	Revised maximum concentration standard	Revised Maximum allowable exceedances
Sulphur dioxide	1 hour	ppb	200	1 day a year	100	None
	1 day	ppb	80	1 day a year	20	None
	1 year	ppb	20	None	Deleted	
Lead	1 year	µg/m^3	0.5	None	No change	None
Particles as PM_{10}	1 day	µg/m^3	50	None	No change	None
	1 year	µg/m^3	25	None	No change	None
Particles as $PM_{2.5}$	1 day	µg/m^3	25	None	No change	None
	1 year	µg/m^3	8	None	No change	None

A feature of the 2021 amendment to the AAQ NEPM is the removal of the maximum allowable exceedances for gaseous pollutants, noting that maximum allowable exceedances for particulates were removed in a 2016 amendment. In place of the maximum allowable exceedances, the standard allows for exclusion of monitoring data that has been determined as being directly associated with an exceptional event.

An exceptional event means a fire or dust occurrence that adversely affects air quality at a particular location that:

a) causes an exceedance of one or more of the following that is in excess of normal historical fluctuations and background levels:

- 1-day average standard for particles as PM_{10};
- 1-day average standard for particles as $PM_{2.5}$;
- 8-hour average standard for photochemical oxidants (as O_3); and

b) is directly related to bushfire, jurisdiction authorised hazard reduction burning or continental scale windblown dust.

2. Monitoring Station Data Recovery and Performance

2.1 Data Recovery

This section details the amount of data acquired over the 12-month period 1st January 2025 to 31st December 2025. **Table 2-1** shows which parameters are measured at each monitoring station.

Table 2-1. Parameters measured at BAAQMP air monitoring stations

Pollutant	Measured at monitoring station			Reasoning
	Burrup Road	Dampier North	Karratha	
Benzene	Yes	No	No	Normally BTEX are measured in small quantities (less than one part per billion by volume). The continuous BTEX analyser was located at Burrup Road monitoring station to provide the best opportunity of investigating small concentrations from nearby potential sources.
Toluene	Yes	No	No	
Ethylbenzene	Yes	No	No	
Xylene	Yes	No	No	
$NO_X/NO_2/NO$	Yes	Yes	Yes	NOx (including NO_2 and NO) is the air pollutant of most importance to Woodside operations on Burrup Peninsula, and Karratha.
O_3	No	Yes	Yes	O_3 is considered to be an indicator of regional air quality; it is formed over periods of minutes to hours in the presence of sunlight, NOx, CO, and other air pollutants. Monitoring of O_3 at Dampier North and Karratha (two well separated locations), is considered to be sufficient to develop an understanding of regional O_3.
Ambient Temperature	Yes	Yes	Yes	This parameter is measured efficiently, and greater numbers of observations are always an advantage, therefore measured at all three locations.
Relative Humidity	Yes	Yes	Yes	See above
Wind Speed/Direction	Yes	Yes	Yes	See above
Solar Radiation	Yes	Yes	Yes	See above

The term 'data capture' refers to the fraction of hours in a year with a valid measurement. Data capture below 100% is expected due to a range of reasons including power outages and routine calibration and maintenance activities. In general, when using modern and well-maintained equipment, typical data capture rates are above 90%. For this project a key performance indicator (KPI) of 95% valid data capture, excluding downtime due to maintenance and calibrations, power outages or planned shutdowns was adopted. Data recovery for monitored substances and meteorological data are presented below in **Table 2-2**.

Data capture exceeded 90% for all parameters at Burrup Road, Dampier North and Karratha. In addition to routine maintenance, calibration checks and stabilisation periods, data capture was intermittently impacted by power interruptions at the three stations. These operational interruptions did not reduce quarterly data availability below NEPM requirements, with all stations and parameters maintaining at least 75% valid data in each quarter.

Table 2-2: Annual data capture for 2025

Parameter	Averaging Period	Annual Data Capture (%)		
		Burrup Road	Dampier North	Karratha Area
Benzene	1 hour	95.4	NA	NA
	Annual	95.4	NA	NA
Toluene	1 hour	96.2	NA	NA
	24 hours	96.7	NA	NA
	Annual	96.2	NA	NA
Ethylbenzene	1 hour	96.4	NA	NA
Xylene	1 hour	96.3	NA	NA
	24 hours	97.0	NA	NA
	Annual	96.3	NA	NA
$NO_X/NO_2/NO$	1 hour	96.4	94.7	95.4
O_3	8 hours	NA	93.8	93.9
Ambient Temperature	N/A	97.6	99.2	93.2
Relative Humidity	N/A	97.6	99.2	92.4
Wind Speed/Direction	N/A	97.5	99.1	99.2
Solar Radiation	N/A	93.3	90.7	95.5

3. Air Quality Monitoring Summary

Monitoring results from 2025 for benzene, toluene, ethylbenzene, xylene, NO_2 and O_3 are presented in the following subsections. The monitoring data are reported against the air quality standards and triggers outlined in **Table 1-2**.

An average concentration i.e. hourly average, 24-hour average, rolling 8-hourly average or annual average, must include at least 75% valid data for the period being reported. For demonstrating annual compliance, in addition to the 75% annual data availability, at least 75% data per calendar quarter is required to cover possible seasonal effects in pollution behaviour (NEPC, 2001).

3.1 Summary

The maximum concentrations measured for benzene, toluene, ethylbenzene, xylene, NO_2 and O_3 are shown in **Table 3-1**.

Apart from high background ozone caused by local bushfire emissions, ambient concentrations did not exceed any NEPM standards or NSW EPA screening trigger levels in 2025.

Table 3-1: Maximum concentrations at each monitoring station, 2025

Pollutant	Averaging Period	Maximum concentration (ppb)			NEPM Standard (ppb)	Screening Trigger Level
		Burrup Road	Dampier North	Karratha Area		
Benzene (ppb)	1-hour	8.56	Not installed at this site	Not installed at this site	-	9
	Annual	0.03			3	-
Toluene (ppb)	1-hour	10.18	Not installed at this site	Not installed at this site	-	90
	24-hour	0.90			1000	-
	Annual	0.04			100	-
Ethylbenzene (ppb)	1- hour	0.56	Not installed at this site	Not installed at this site	-	1800
Xylene (ppb)	1-hour	2.08	Not installed at this site	Not installed at this site	-	40
	24-hour	0.17			250	-
	Annual	0.01			200	-
NO_2 (ppb)	1-hour	34.5	22.62	23.63	80	-
	Annual	2.73	2.34	1.96	15	-
O_3 (ppb)	8-hour	Not installed at this site	41.38	41.0	65	-

3.2 Benzene, Toluene, Ethylbenzene and Xylenes

BTEX monitoring is undertaken at Burrup Road and conducted using a continuous gas chromatograph, which analyses an ambient air sample each 15 minutes. Hourly, daily and annual averages provide the basis of the data reported in this section. NSW EPA (2022) trigger levels were used to assist in interpretation of the hourly average concentrations.

3.2.1 Benzene

The statistical analysis of hourly and annual average measured benzene results is summarised in **Table 3-2** for 2025.

The NEPM standard for benzene is an annual standard of 3 ppb. The NSW EPA 1-hour average trigger level of 9 ppb was used for screening of short-term hourly data.

Table 3-2: Monitoring results for benzene: 2025

Statistic	NEPM Standard	Trigger Level
	Annual Average	Hourly Average
Fraction of time Objective met (%)	100	100
Exceedances of Objective	0 (years)	0 (hours)
No. records	0 [4]	8357
Total possible	1	8760
Data Capture (%)	100	95.4
Median (ppb)	-	0.01
Average (ppb)	0.03	0.03
70th percentile (ppb)	-	0.02
Maximum (ppb)	-	8.56
Objective (ppb)	3	9

Data capture for benzene was 95.4% over the year and the annual average concentration for benzene was 0.03 ppb. The highest 1-hour average was 8.56 ppb on 13rd of July at 20:00, which is close to but below the screening criterion.

3.2.2 Toluene

The NEPM standard for toluene is a 24-hour average standard of 1000 ppb and an annual standard of 100 ppb. Summary statistics of the measured toluene concentrations from 2025 are presented in **Table 3-3**.

The NSW EPA 1-hour average trigger level of 90 ppb is used for screening of short-term hourly data.

Table 3-3: Monitoring results for toluene: 2025

Statistic	NEPM Standard		Trigger Level
	Annual Average	Daily Average	Hourly Average
Fraction of time Objective met (%)	100	100	100
Exceedances of Objective	0 (years)	0 (days)	0 (hours)
No. records	0 [4]	353	8429

[4] Annual Average does not meet the NEPM guideline of 75% valid each calendar quarter (see discussion in main text).

Statistic	NEPM Standard		Trigger Level
	Annual Average	Daily Average	Hourly Average
Total possible	1	365	8760
Data Capture (%)	100	96.7	96.2
Median (ppb)	-	0.02	0.01
Average (ppb)	0.04	0.04	0.04
70th percentile (ppb)	-	0.03	0.02
Maximum (ppb)	-	0.90	10.18
Objective (ppb)	100	1000	90

There was no exceedance of the 24-hour NEPM standard of 1000 ppb. The highest 24-hour average was 0.9 ppb on the 20th f January. Data capture for toluene was 96.2% over the year and the annual average concentration for Toluene was 0.04 ppb. The highest 1-hour average was 10.18 ppb, well below the trigger level of 90 ppb.

3.2.3 Ethylbenzene

There is no NEPM standard for ethylbenzene. The NSW EPA 1-hour average trigger level of 1800 ppb is used for screening of short-term hourly data. Summary statistics of the measured ethylbenzene concentrations from 2025 are presented in **Table 3-4**.

Table 3-4: Statistics for ethylbenzene: 2025

Statistic	Burrup Road
	1-hr Average (ppb)
Fraction of time NSW EPA Trigger met (%)	100
Exceedances of Objective	0 (hours)
No. records	8441
Total possible	8760
Data Capture (%)	96.4
Median (ppb)	0.00
Average (ppb)	0.00
70th percentile (ppb)	0.00
Maximum (ppb)	0.56
Objective (ppb)	1800

Data capture for ethylbenzene was 96.4%. The annual average concentration for ethylbenzene was 0.00 ppb, and the highest 1-hour average was 0.56 ppb, well below the 1800 ppb trigger level.

3.2.4 Xylenes

The NEPM standard for xylenes is a 24-hour average standard of 250 ppb and an annual standard of 200 ppb. Summary statistics of the measured xylene concentrations from 2025 represented in **Table 3-5**.

The NSW EPA 1-hour average trigger level of 40 ppb was used for screening of short-term hourly data.

Table 3-5: Monitoring results for xylenes: 2025

Statistic	NEPM Standard		Trigger Level
	Annual Average	Daily Average	Hourly Average
Fraction of time Objective met (%)	100	100	100
Exceedances of Objective	0 (years)	0 (days)	0 (hours)
No. records	0 [4]	354	8440
Total possible	1	365	8760
Data Capture (%)	100	96.7	96.3
Median (ppb)	-	0.00	0.00
Average (ppb)	0.01	0.01	0.01
70th percentile (ppb)	-	0.01	0.00
Maximum (ppb)	-	0.17	2.08
Objective (ppb)	100	1000	90

There was no exceedance of the 24-hour NEPM standard of 250 ppb. The highest 24-hour average was 0.17 ppb. Data capture for 1-hour xylenes was 96.3 % over the year, and the annual concentration for xylenes was 0.01 ppb, and the highest 1-hour average was 2.08 ppb, well below the trigger level (40 ppb).

3.3 Nitrogen Dioxide

NO_2 is monitored at each of the three monitoring stations. The NEPM standards for nitrogen dioxide are a 1-hour average standard of 80 ppb and an annual standard of 15 ppb. Summary statistics of the 1-hour average and annual NO_2 measurements are presented in **Table 3-6**.

Table 3-6: 1-hour average statistics for nitrogen dioxide

Statistic	NEPM Standard					
	Annual Average			Hourly Average		
	Burrup Road	Dampier North	Karratha	Burrup Road	Dampier North	Karratha
Fraction of time Objective met (%)	100	100	100	100	100	100
Exceedances of Objective	0 (years)	0 (years)	0 (years)	0 (hours)	0 (hours)	0 (hours)
No. records	1	0 [4]	0 [4]	8179	8296	8358
Total possible	1	1	1	8760	8760	8760

Statistic	NEPM Standard					
	Annual Average			Hourly Average		
	Burrup Road	Dampier North	Karratha	Burrup Road	Dampier North	Karratha
Data Capture (%)	100	0 [4]	0 [4]	93.4	94.7	95.4
Median (ppb)	-	-	-	1.5	1.4	1.4
Average (ppb)	2.7	2.3	2.0	2.7	2.3	2.0
70th percentile (ppb)	-	-	-	2.8	2.3	2.1
Maximum (ppb)	-	-	-	34.5	22.6	23.6
Objective (ppb)	15			80		

There was no exceedance of the 1-hour average NEPM standard of 80 ppb at any of the monitoring sites. The highest 1-hour average was 34.5 ppb on 11st June at 2AM at Burrup Road. The annual average concentration for NO_2 was 2.73 ppb, 2.34 ppb and 1.96 ppb at the Burrup Road, Dampier North and Karratha monitoring stations, respectively, well below the 15 ppb NEPM standard.

3.4 Ozone

O_3 is monitored at the Dampier North and Karratha monitoring stations. The NEPM standard for O_3 is a rolling 8-hour standard of 65 ppb. Summary statistics of the measured 8-hour rolling ozone results are presented in **Table 3-7** for 2025.

Table 3-7: 8-hour average statistics for ozone: 2025

Statistic	NEPM Standard	
	8-Hourly Average	
	Dampier North	Karratha
Fraction of time Objective met (%)	100	100
Exceedances of Objective	0 (hours)	0 (hours)
No. records	8215	8228
Total possible	8740	8740
Data Capture (%)	93.8	93.9
Median (ppb)	24.7	25.4
Average (ppb)	24.7	25.2
70th percentile (ppb)	27.4	28.2
Maximum (ppb)	41.4	41.0
Objective (ppb)	65	

There was no exceedance of the 8-hour rolling-average NEPM standard of 65 ppb at either of the monitoring sites. The data capture over the year was 93.8% and 93.9% at Dampier North and Karratha, respectively.

The annual average concentration for the 8-hour rolling-average O_3 was 24.7 ppb and 25.2 ppb at the Dampier North and Karratha monitoring stations, respectively, well below the 65 ppb NEPM standard.

3.5 Summary of All Measurement Results

The data capture for all quarters was within NEPM requirements., no substances exceeded NEPM standards during the 1st of January 2025 to 31st of December 2025 period, and there were no exceedances of the NSW EPA trigger levels used for screening of short term hourly BTEX measurements.

4. Meteorological Monitoring Summary

Seasonal wind roses for the Burrup Road, Dampier North and Karratha monitoring stations are presented in **Figure 4-1**, **Figure 4-2** and **Figure 4-3**, respectively. Wind roses are based on hourly averaged data and are produced using OpenAir (Carslaw, 2012).

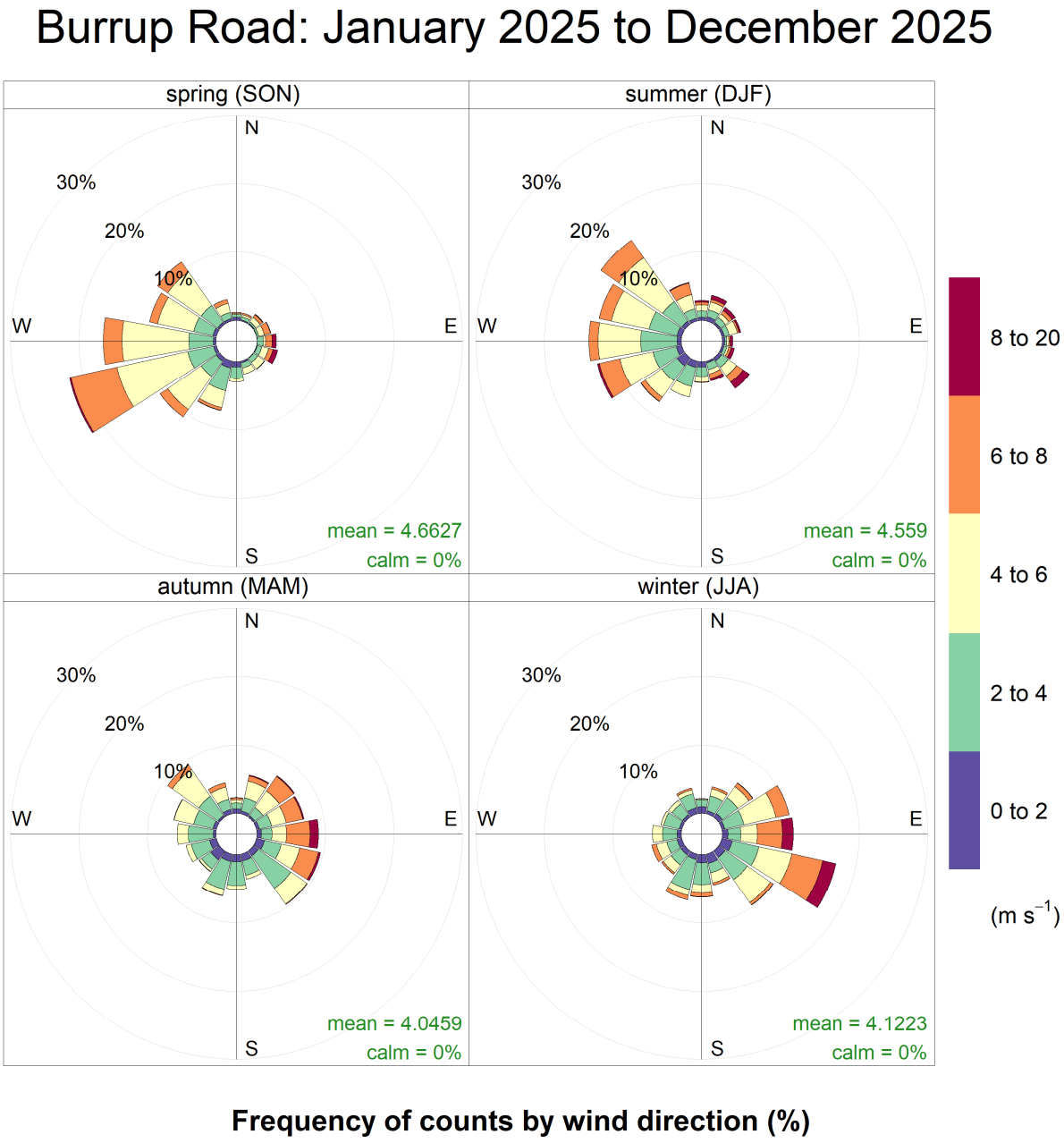

Figure 4-1: Seasonal wind roses - Burrup Road: 2025

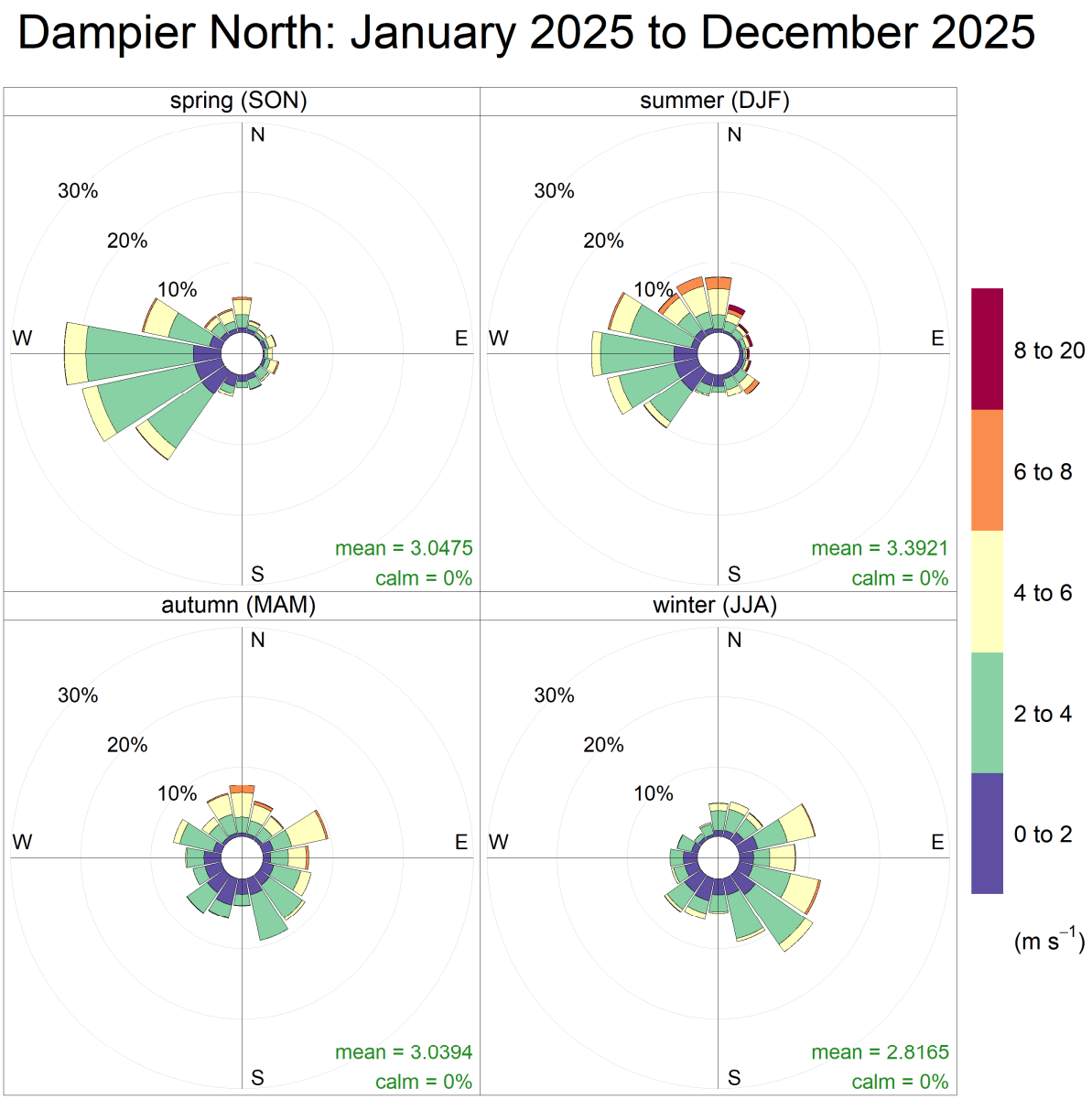

Figure 4-2: Seasonal wind roses - Dampier North: 2025

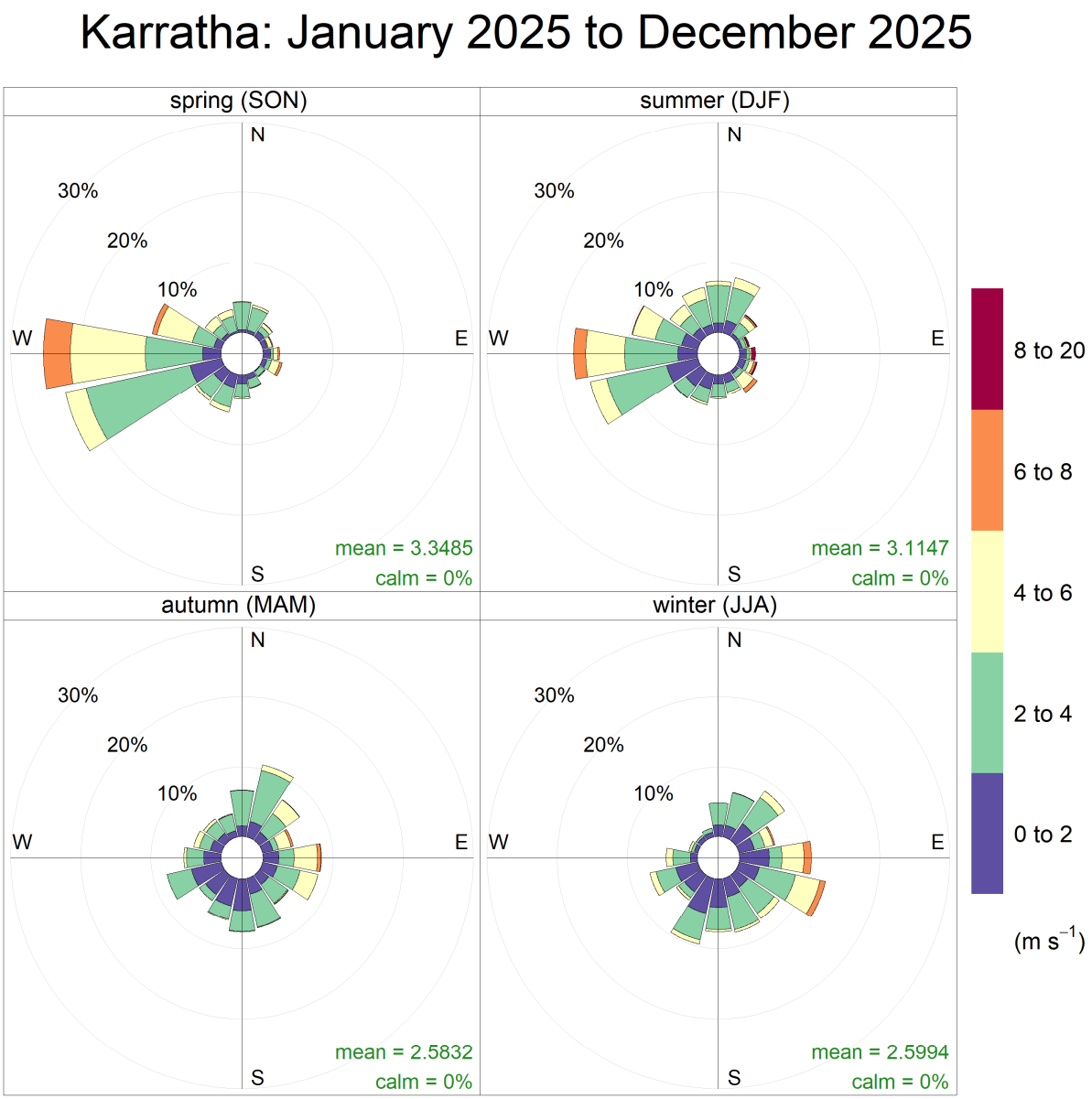

Figure 4-3: Seasonal wind roses - Karratha: 2025

5. Key Issues and Conclusions

At Dampier North, NO, NO_2 and NO_x were impacted between 13 September and 24 September 2025 due to a faulty serial module preventing automatic span checks from triggering for a period exceeding seven days.

All measured parameters had above 75% data capture, and there were no exceedances of NEPM or NSW EPA trigger levels.

6. References

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