



Adelaide Brighton Cement Ltd

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QUARTERLY GROUND LEVEL PARTICULATE MONITORING REPORT FOR BIRKENHEAD WORKS

COMPLIANCE DATE: 30/04/23 - Quarter 1, 2023

**EPA Licence 1126: Ground Level Particulate Monitoring and
Reporting plan (U-729)**

Licensed site: Adelaide Brighton Cement, Birkenhead Works

62 Elder Road, Birkenhead, SA 5015

Date of Submission: 30 April 2023

Version Number: 1



Report Submitted by: Advisor Environment (C&L (SA/NSW/NT))

Glossary

Term	Definition
$\mu\text{g}/\text{m}^3$	micrograms per cubic metre
μm	micrometre
$^{\circ}\text{C}$	degrees Celsius
m	metre
m^3	cubic metre
m^3/s	cubic metres per second

Nomenclature	Definition
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PM_{10}	Particulate matter with a diameter less than 10 micrometres
$\text{PM}_{2.5}$	Particulate matter with a diameter less than 2.5 micrometres
24 hour average	Calendar day (midnight to midnight)

Abbreviations	Definition
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ABC	Adelaide Brighton Cement
Air EPP	South Australian Environment Protection (Air Quality) Policy 2016
GLPMRP	ABC's Ground Level Particulate Monitoring and Reporting Plan
EPA	Environment Protection Authority

Sampling Locations

- Map showing sampling locations, major infrastructure, sensitive environmental receptors, and north arrow



Sampling locations are indicated by colour-coded dots on the above map.

NB: Four sampling points are located on the Birkenhead Works site; the other sampling points are in the community (corner of Gunn/ Well streets and Community Park).

Monitoring Objective	<p>To provide monitoring and reporting of ground level particulate concentrations (PM₁₀ and PM_{2.5}), from a network of monitors located within and external to the site premises.</p> <ul style="list-style-type: none"> • Monitoring data for each monitor (on site and off site) shall include: <ul style="list-style-type: none"> ○ Monthly wind rose showing the distribution of wind directions ○ Monthly dust rose showing the distribution of PM₁₀ concentration ○ Monthly dust rose showing the distribution of PM_{2.5} concentration ○ Particulate monitoring data for each ABC monitor (on site and off site) including EPA monitor (Le Fevre 1) for comparison as follows; <ul style="list-style-type: none"> ○ Monthly time series graph of 24-hour average PM₁₀ concentration reported against the Air EPP for PM₁₀ of 50 micrograms per cubic metre (24-hour average). ○ Monthly time series graph of 24-hour average PM_{2.5} concentration reported against the Air EPP for PM_{2.5} of 25 micrograms per cubic metre (24-hour average).
Monitoring Plan	<p>This monitoring report has been prepared in compliance with the Ground Level Particulate Monitoring and Reporting Plan (GLPMRP), approved 18 June 2018 by the South Australian EPA.</p> <p>The Plan is available on the ABC Birkenhead Community Website: https://adelaidebrightoncommunity.com.au/</p>
Monitoring data for each ABC monitor	<p>Monitoring reports for October, November and December 2022 are in the appendix.</p> <p>Monitoring reports provide for each monitor the following:</p> <ul style="list-style-type: none"> • PM_{2.5}, PM₁₀ 24-hour averages • PM_{2.5}, PM₁₀ monthly wind & dust rose <p>The property (not owned by ABC), on which the Gunn Street Monitor was located, was sold for redevelopment and was no longer available for use. As a consequence the monitor was removed on 28 June 2022. A new monitoring location is currently being determined.</p> <p>There were no 24-hour exceedances of PM₁₀ and PM_{2.5} Air (EPP) criteria on ambient particulate monitors in the community, during this reporting period.</p>
Appendix	<p>January, February and March Monitoring Reports (attached)</p>

Contents

Monitoring Summary (01 Jan, 2023 - 31 Jan, 2023)	1
Public Monitors	1
Internal Monitors	4
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Monitoring Summary (01 Jan, 2023 - 31 Jan, 2023)

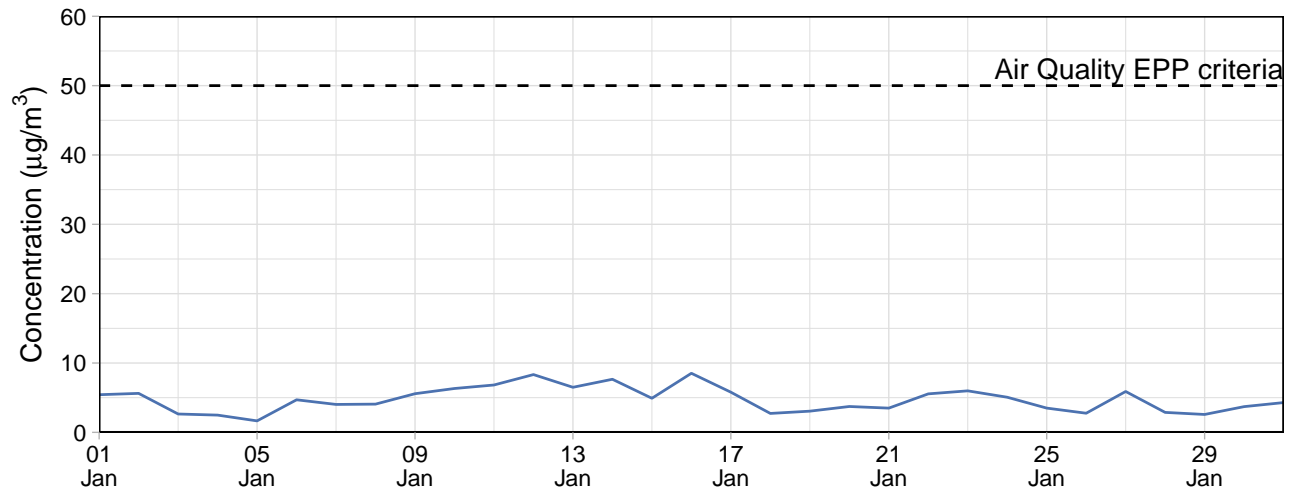
Public Monitors

Table 1: Summary of 24-hour average data collected at public monitors ($\mu\text{g}/\text{m}^3$)

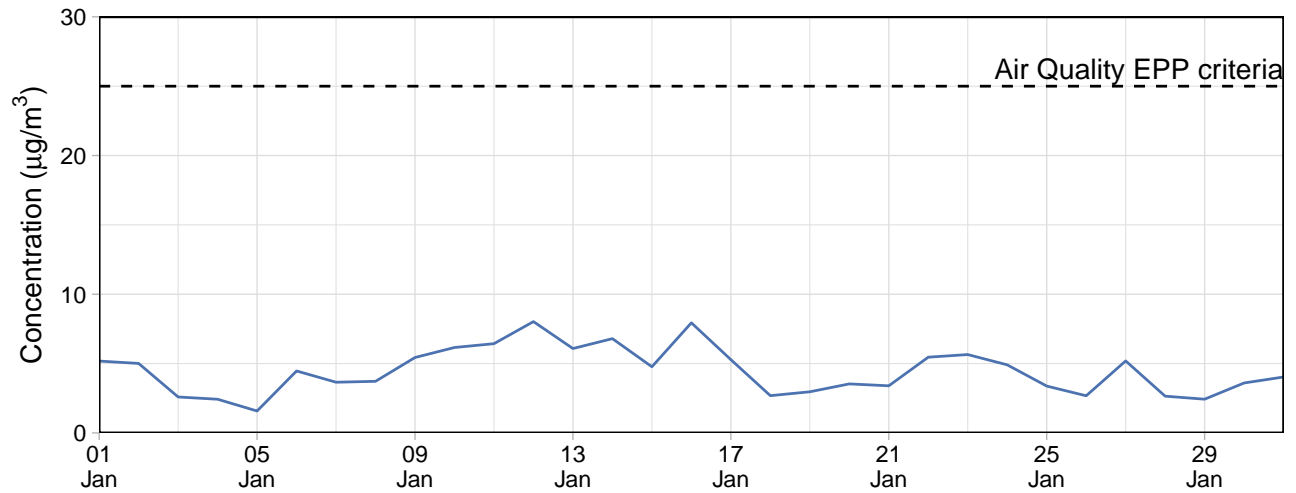
Site	PM ₁₀				PM _{2.5}			
	Min	Avg	Max	Capture (%)	Min	Avg	Max	Capture (%)
Community Park	1.7	4.7	8.5	100	1.6	4.5	8	100

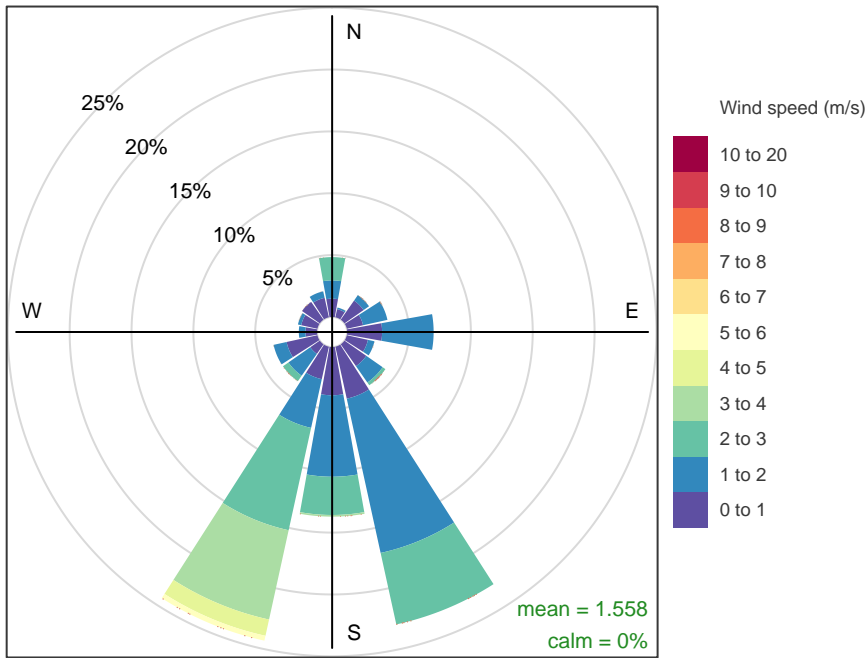
Community Park

Community Park – 24-hour average PM₁₀

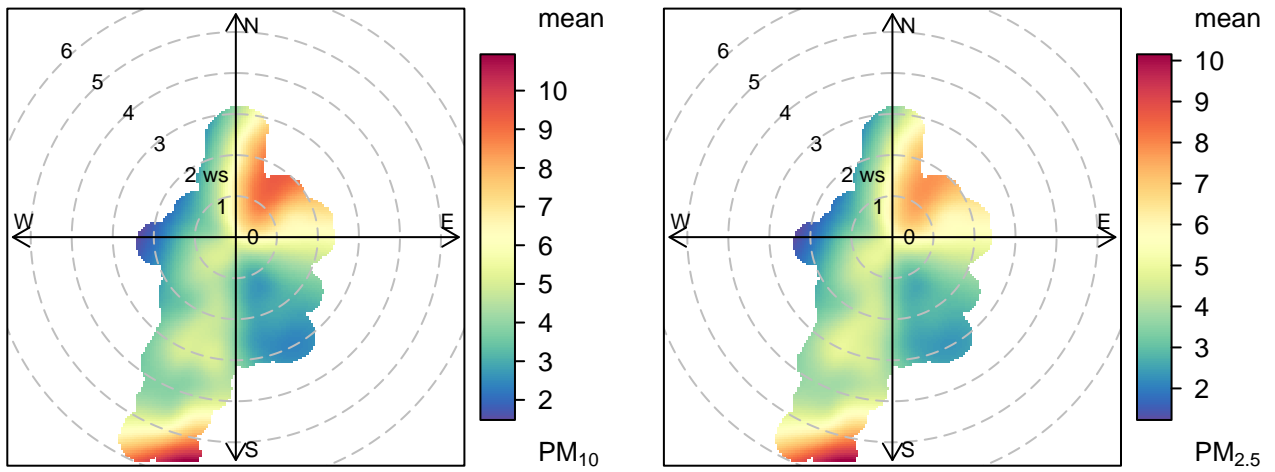


Community Park – 24-hour average PM_{2.5}





Frequency of counts by wind direction (%)



Gunn Street

No data available for the reporting period.

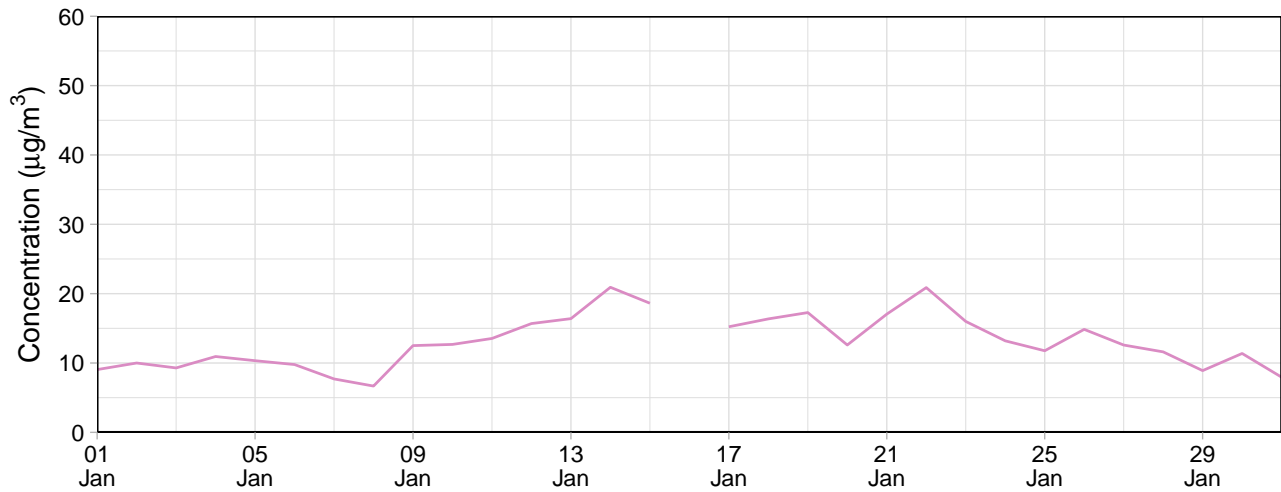
Internal Monitors

Table 2: Summary of 24-hour average data collected at internal monitors ($\mu\text{g}/\text{m}^3$)

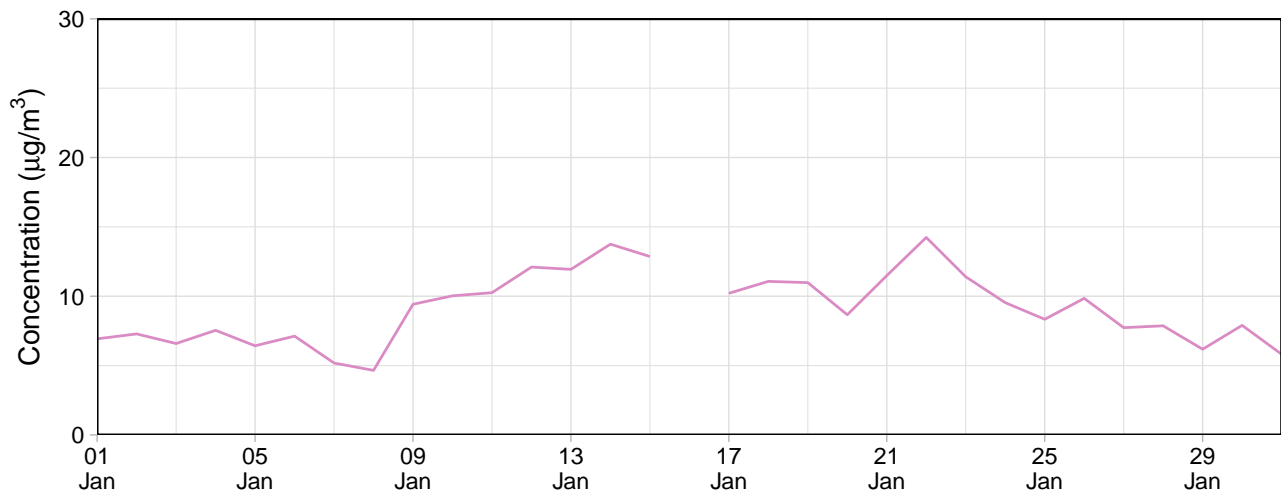
Site	PM ₁₀				PM _{2.5}			
	Min	Avg	Max	Capture (%)	Min	Avg	Max	Capture (%)
Southern Grounds	2.8	7.0	20.9	100.0	2.4	6.1	16.1	100.0
Eastern Grounds	7.3	14.0	23.6	90.3	5.5	10.2	15.4	90.3
Block 9	3.0	11.5	75.4	100.0	2.7	8.1	45.8	100.0
Northern Grounds	6.7	13.1	20.9	96.8	4.7	9.1	14.2	96.8

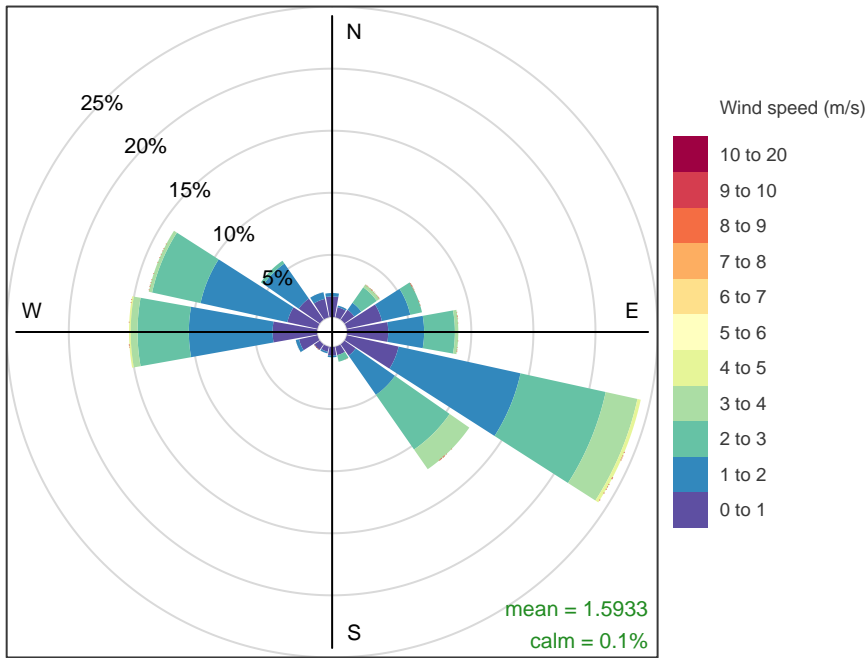
Northern Grounds

Northern Grounds – 24-hour average PM₁₀

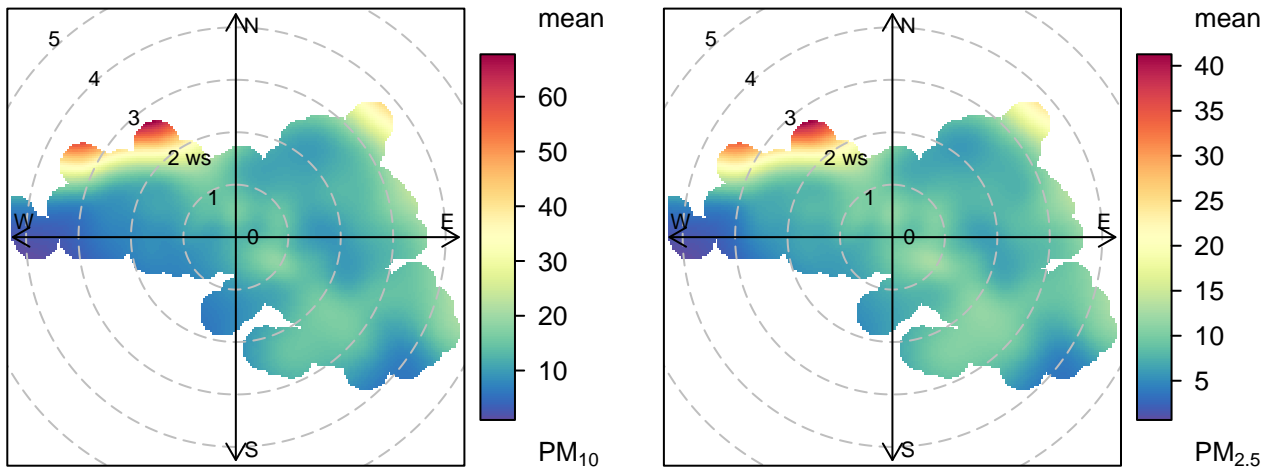


Northern Grounds – 24-hour average PM_{2.5}



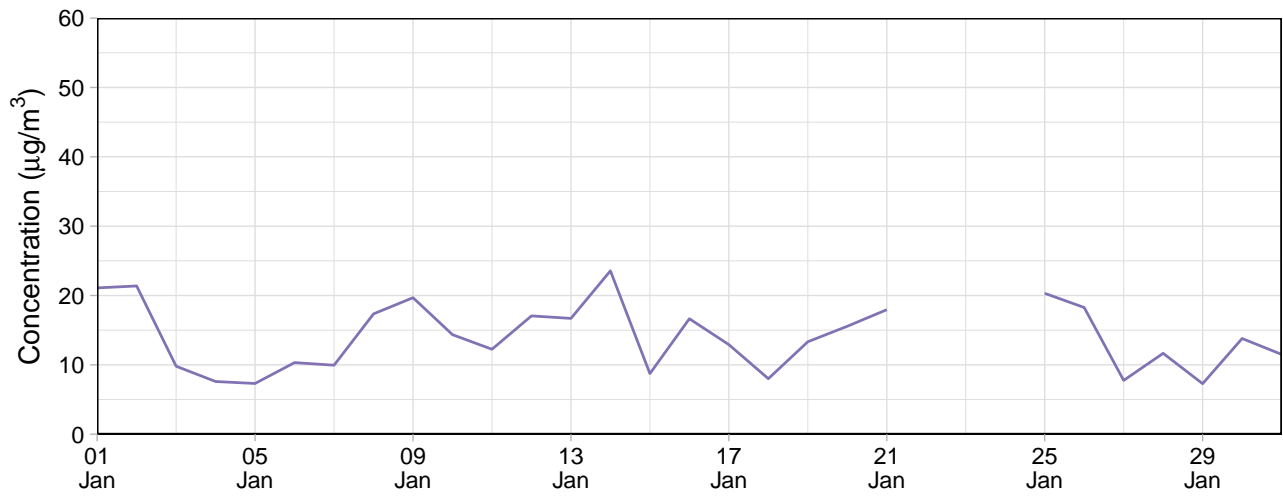


Frequency of counts by wind direction (%)

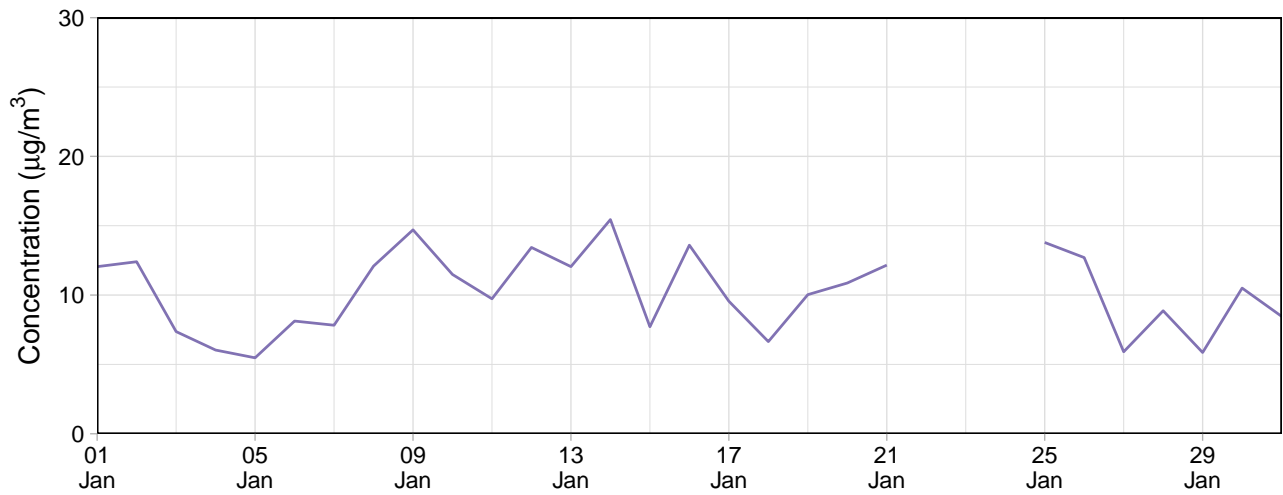


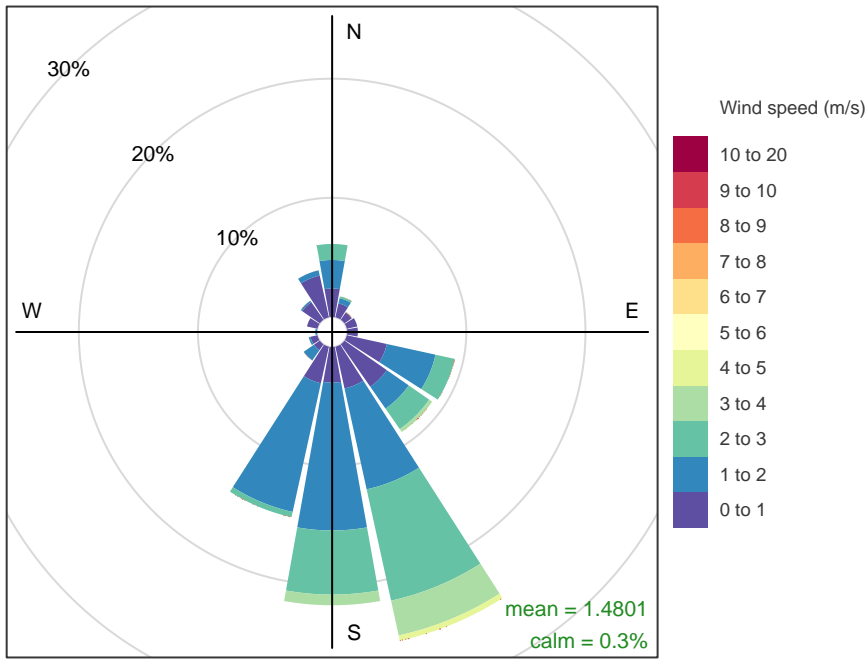
Eastern Grounds

Eastern Grounds – 24-hour average PM₁₀

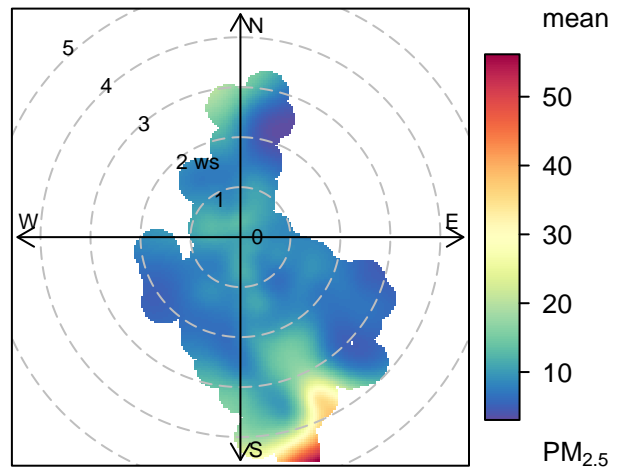
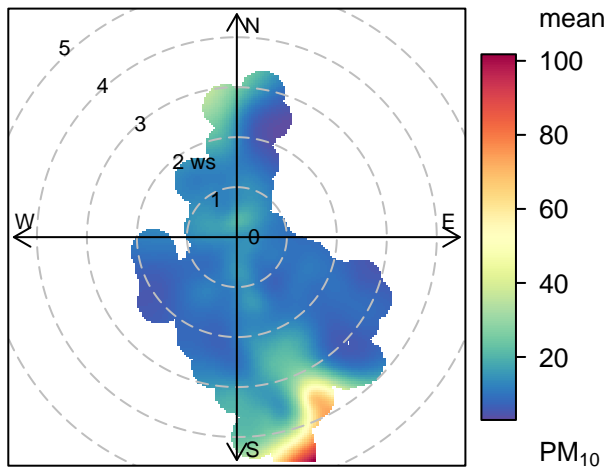


Eastern Grounds – 24-hour average PM_{2.5}



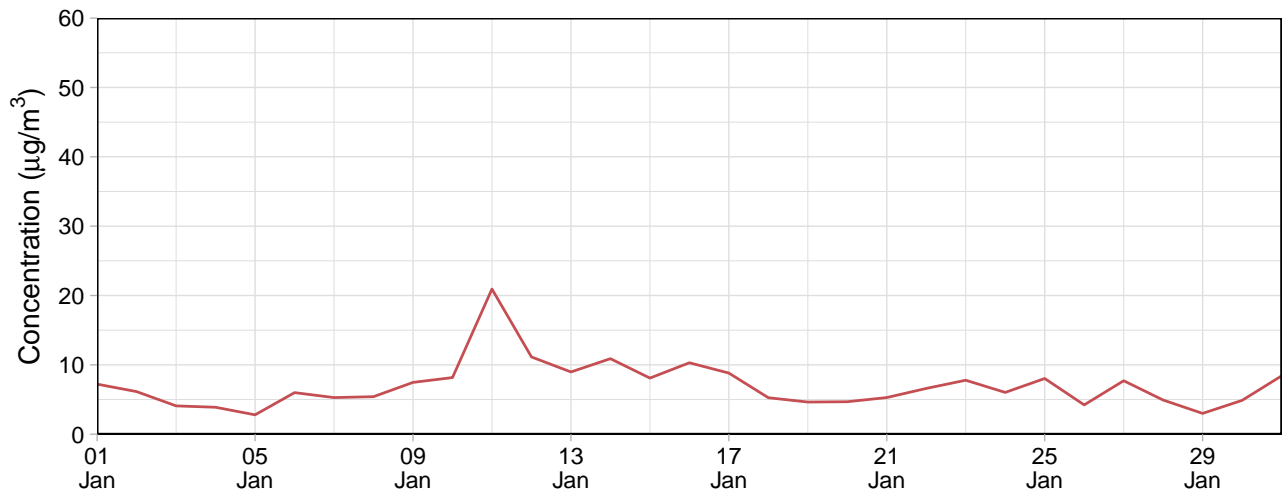


Frequency of counts by wind direction (%)

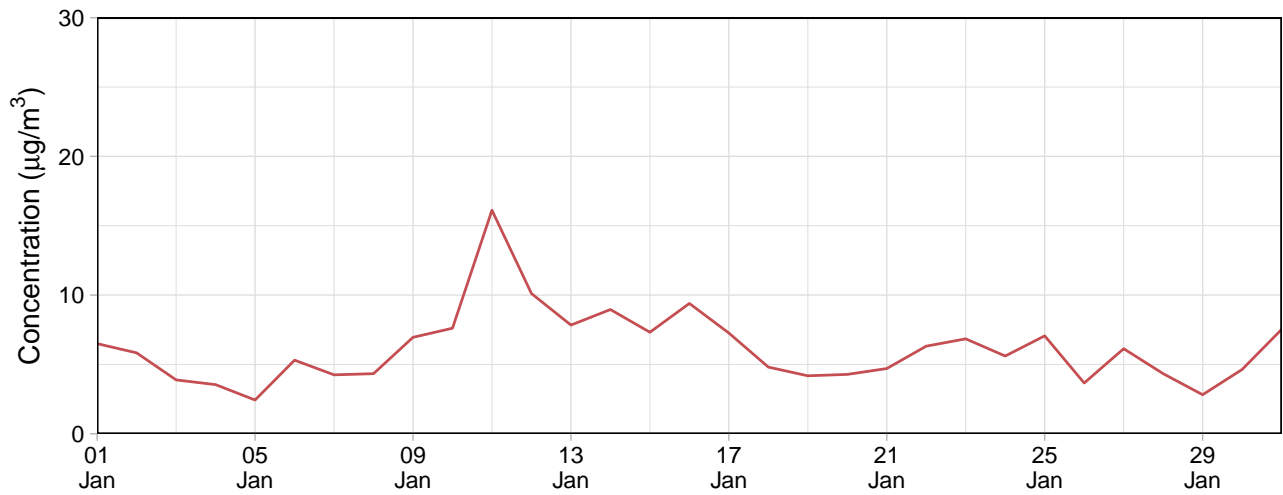


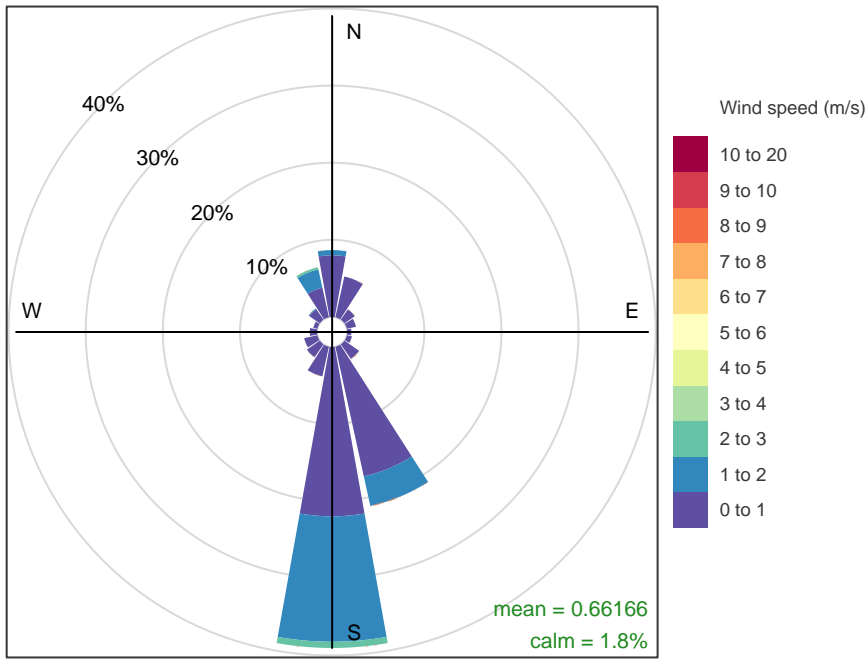
Southern Grounds

Southern Grounds – 24-hour average PM₁₀

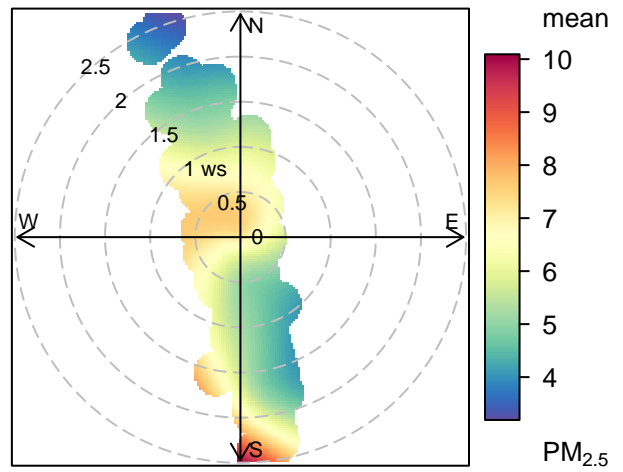
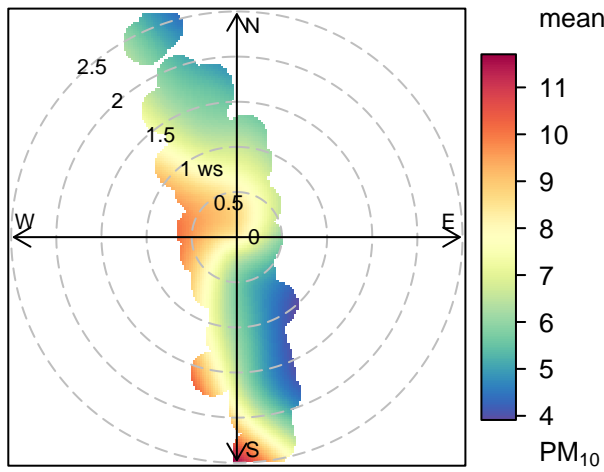


Southern Grounds – 24-hour average PM_{2.5}



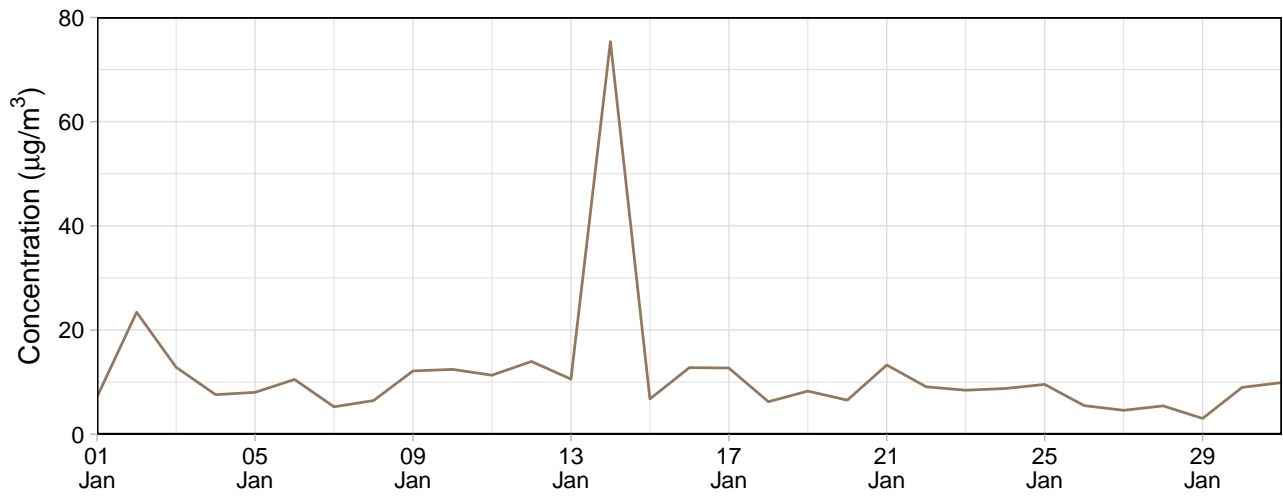


Frequency of counts by wind direction (%)

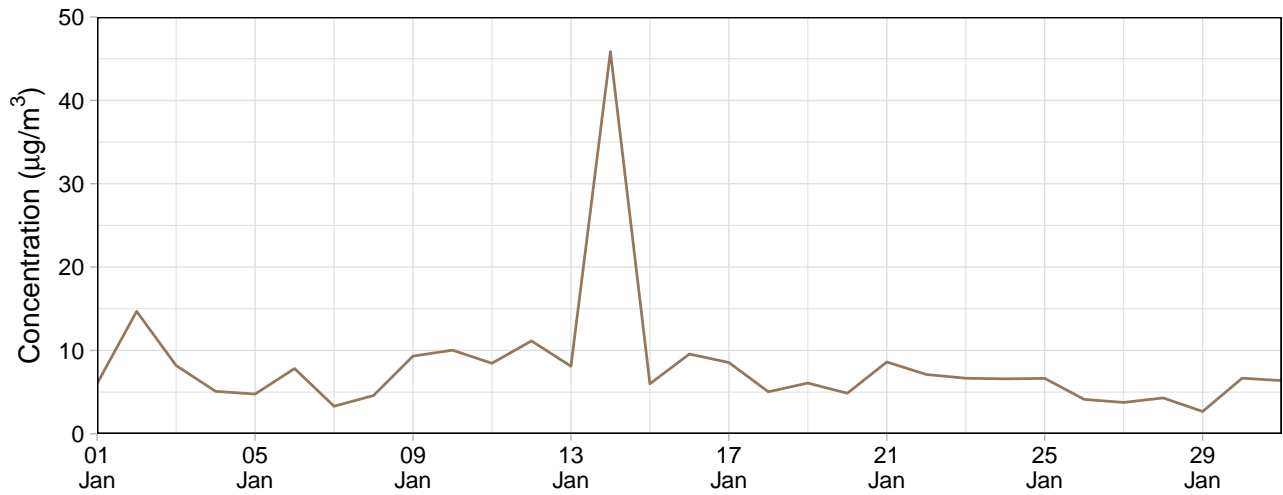


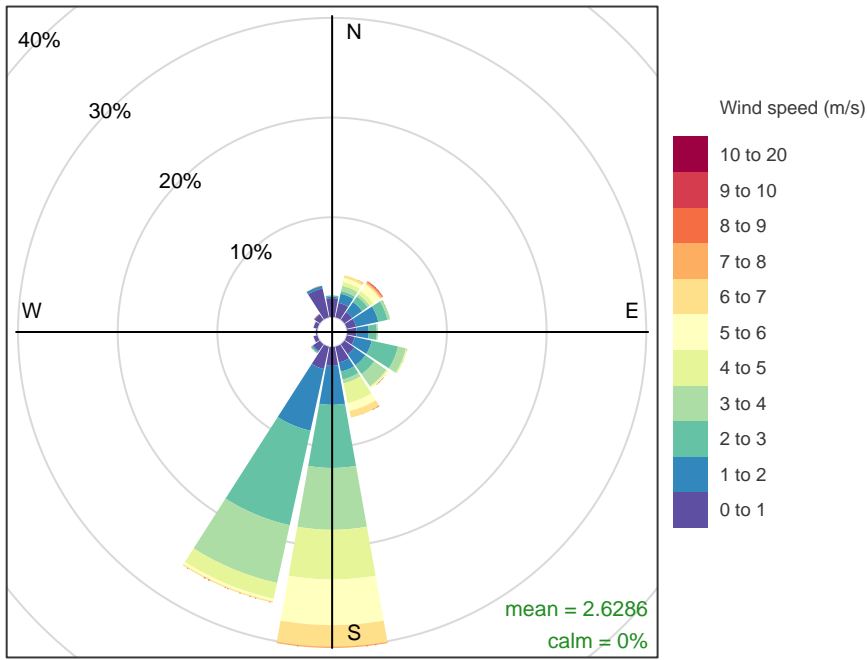
Block 9

Block 9 – 24-hour average PM₁₀

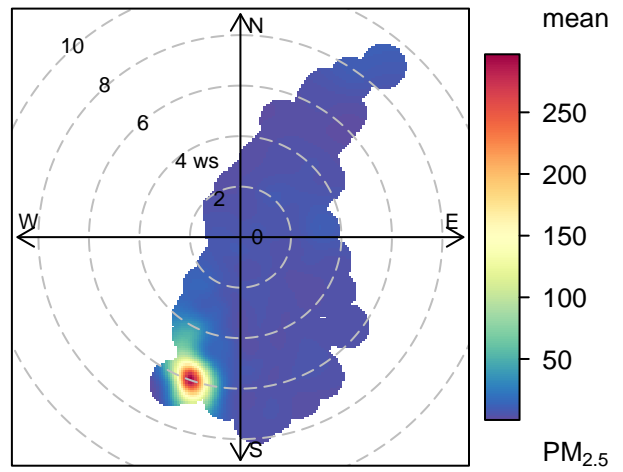
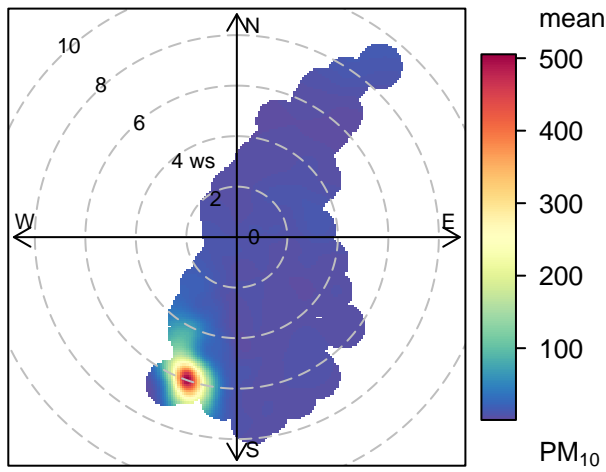


Block 9 – 24-hour average PM_{2.5}





Frequency of counts by wind direction (%)



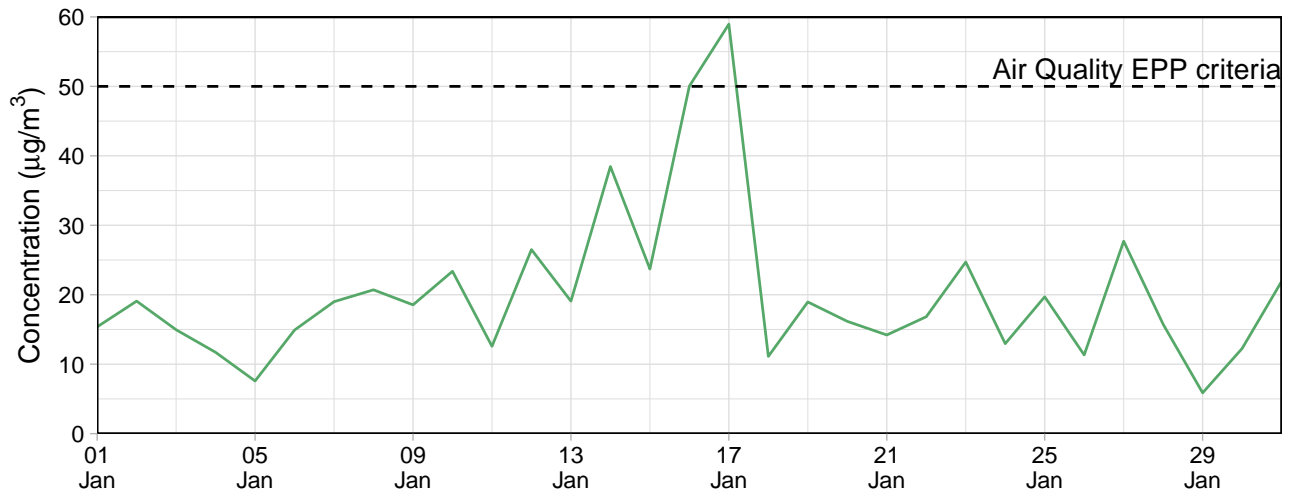
EPA Monitoring

Le Fevre 1

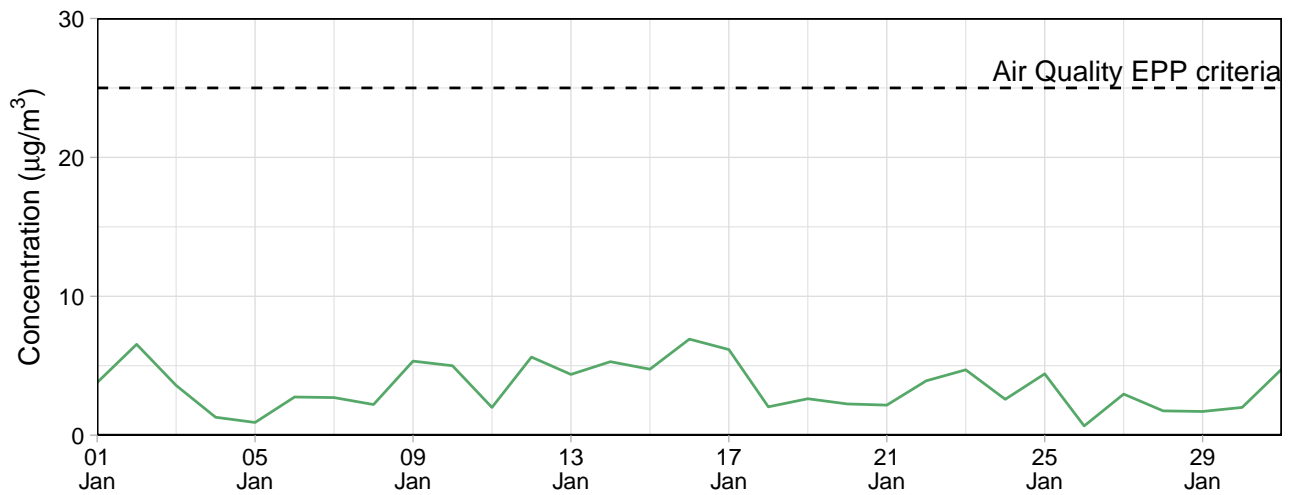
Table 3: Summary of 24-hour average data collected at EPA monitors ($\mu\text{g}/\text{m}^3$)

Site	PM ₁₀				PM _{2.5}			
	Min	Avg	Max	Capture (%)	Min	Avg	Max	Capture (%)
Le Fevre 1	5.9	20.1	59	100	0.7	3.5	6.9	100

Le Fevre 1 – 24-hour average PM₁₀



Le Fevre 1 – 24-hour average PM_{2.5}



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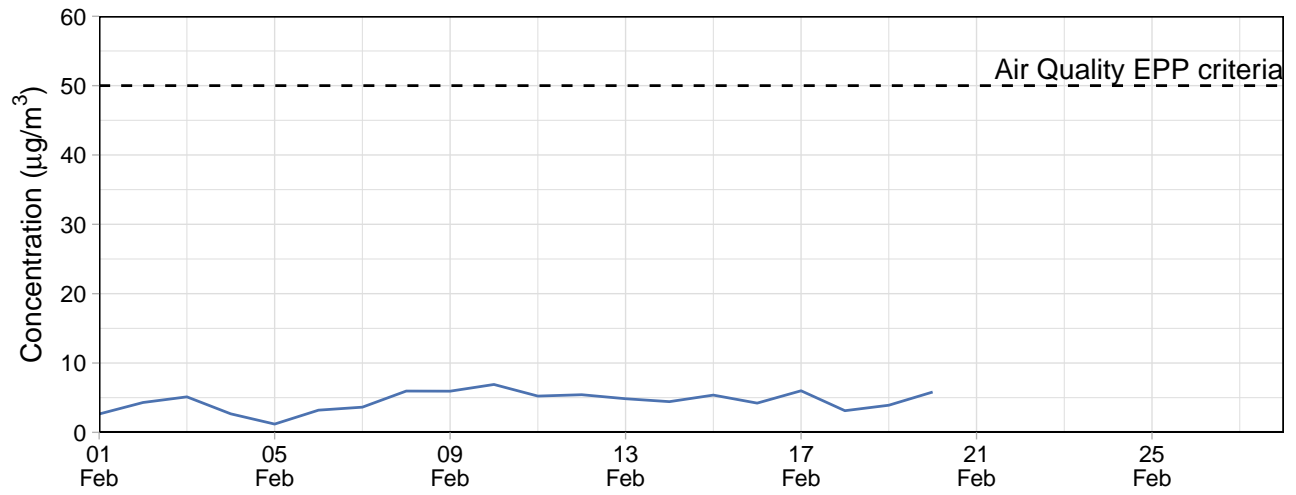
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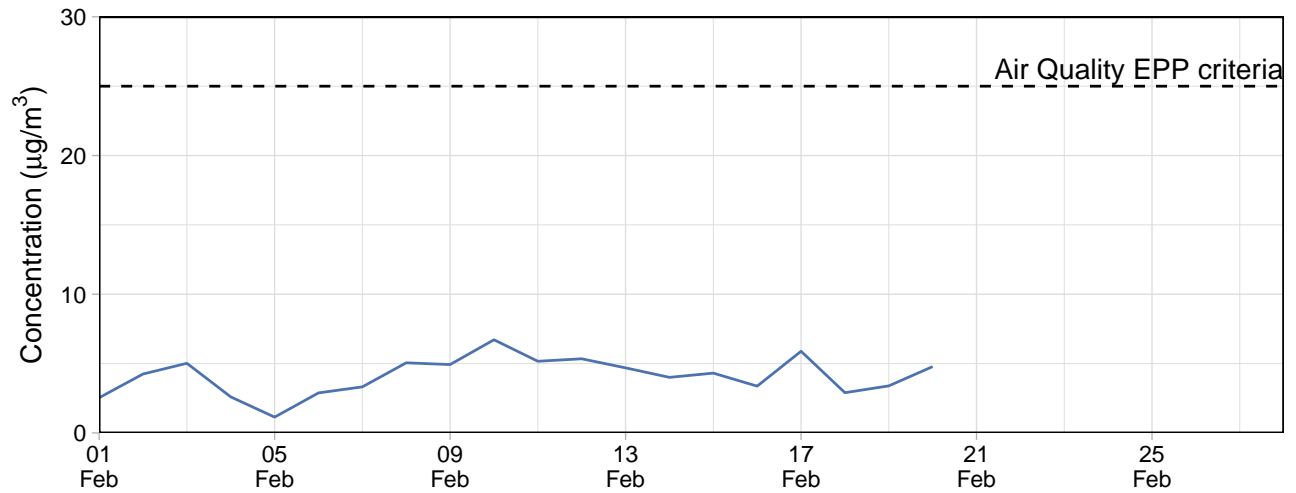
Site	PM ₁₀				PM _{2.5}			
	Min	Avg	Max	Capture (%)	Min	Avg	Max	Capture (%)
Community Park	1.2	4.5	6.9	75	1.1	4.2	6.7	75

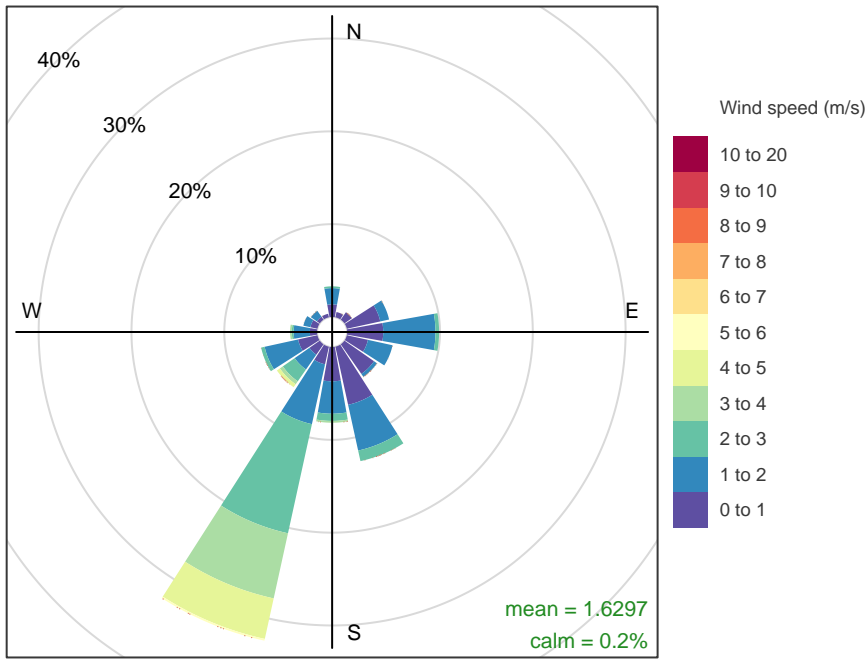
Community Park

Community Park – 24-hour average PM₁₀

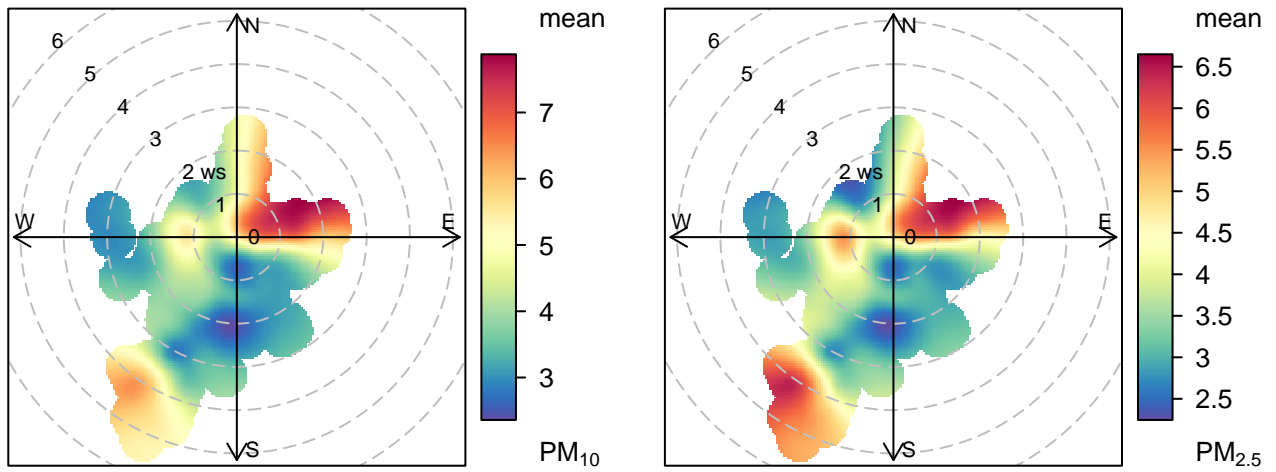


Community Park – 24-hour average PM_{2.5}





Frequency of counts by wind direction (%)



Gunn Street

No data available for the reporting period.

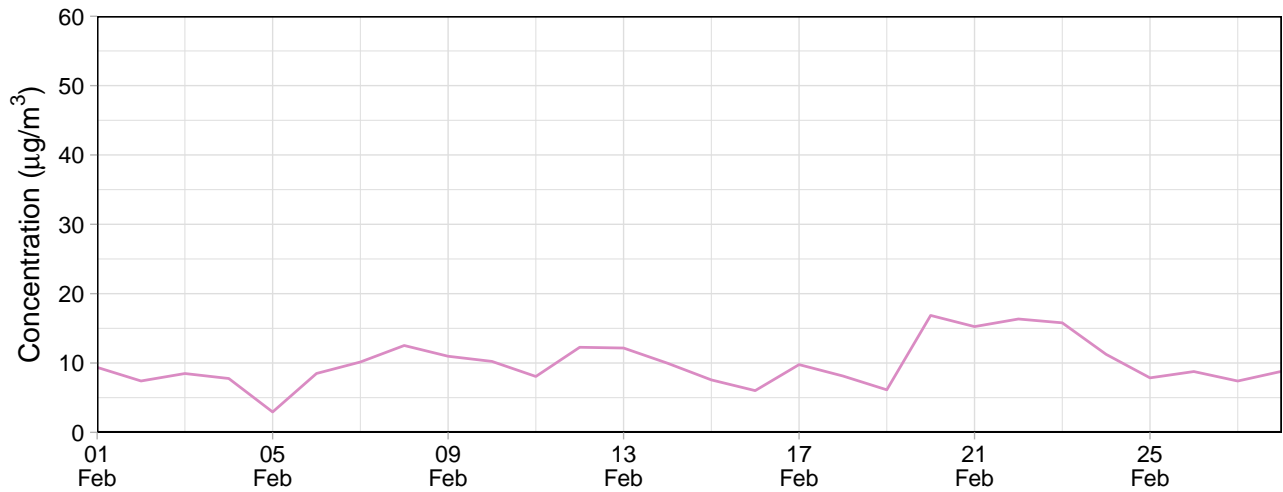
Internal Monitors

Table 2: Summary of 24-hour average data collected at internal monitors ($\mu\text{g}/\text{m}^3$)

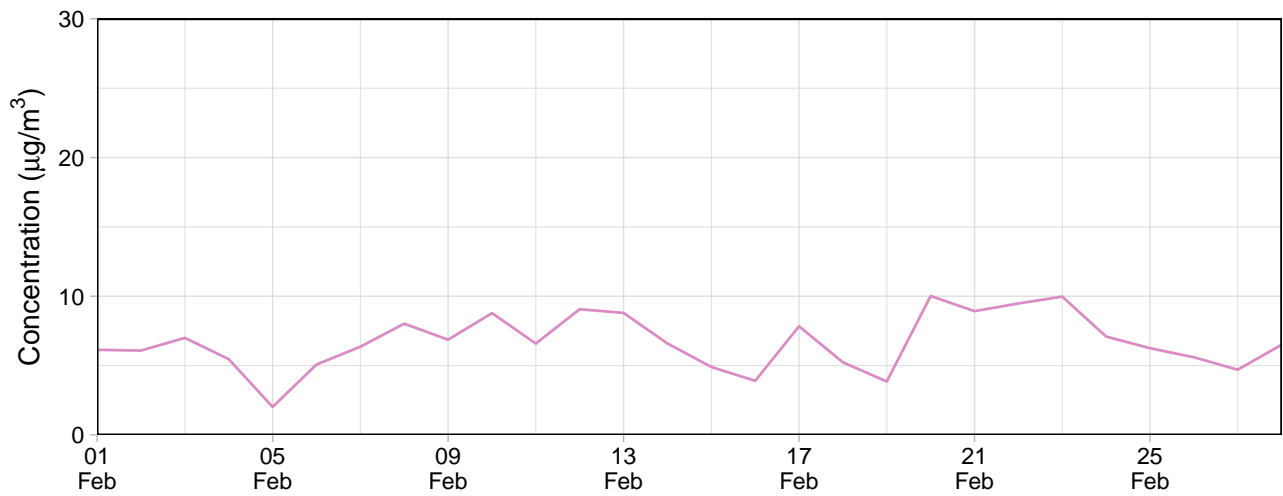
Site	PM ₁₀				PM _{2.5}			
	Min	Avg	Max	Capture (%)	Min	Avg	Max	Capture (%)
Southern Grounds	2.1	6.5	12.1	100	1.8	5.5	8.7	100
Eastern Grounds	4.9	12.4	19.9	100	3.5	9.0	14.1	100
Block 9	3.0	8.7	18.6	100	2.4	6.1	11.7	100
Northern Grounds	2.9	9.9	16.9	100	2.0	6.7	10.0	100

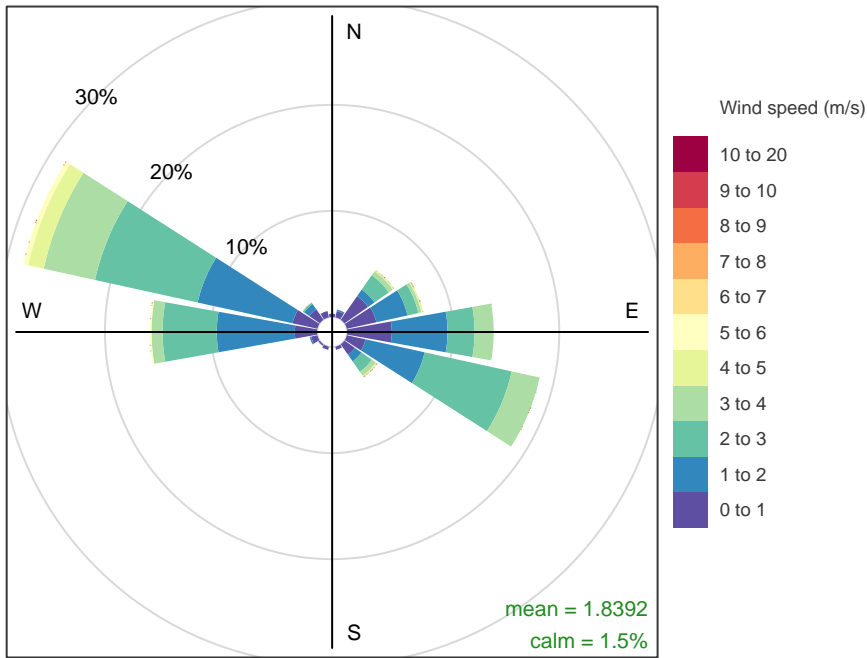
Northern Grounds

Northern Grounds – 24-hour average PM₁₀

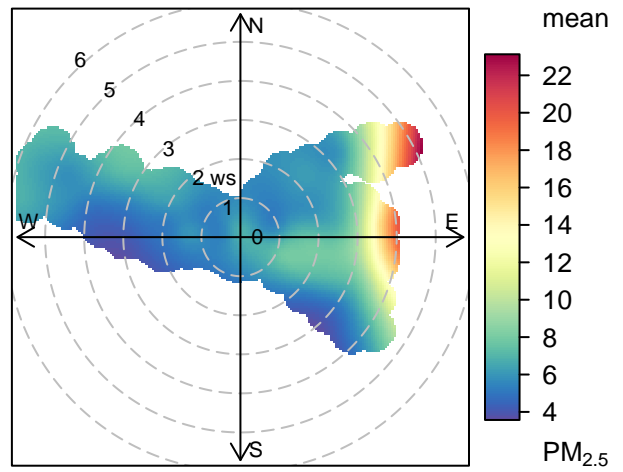
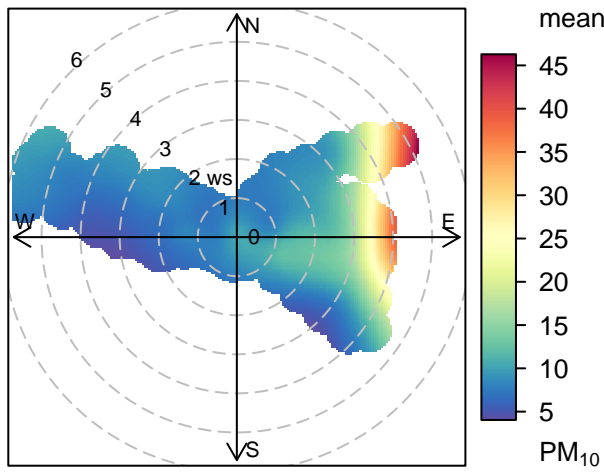


Northern Grounds – 24-hour average PM_{2.5}



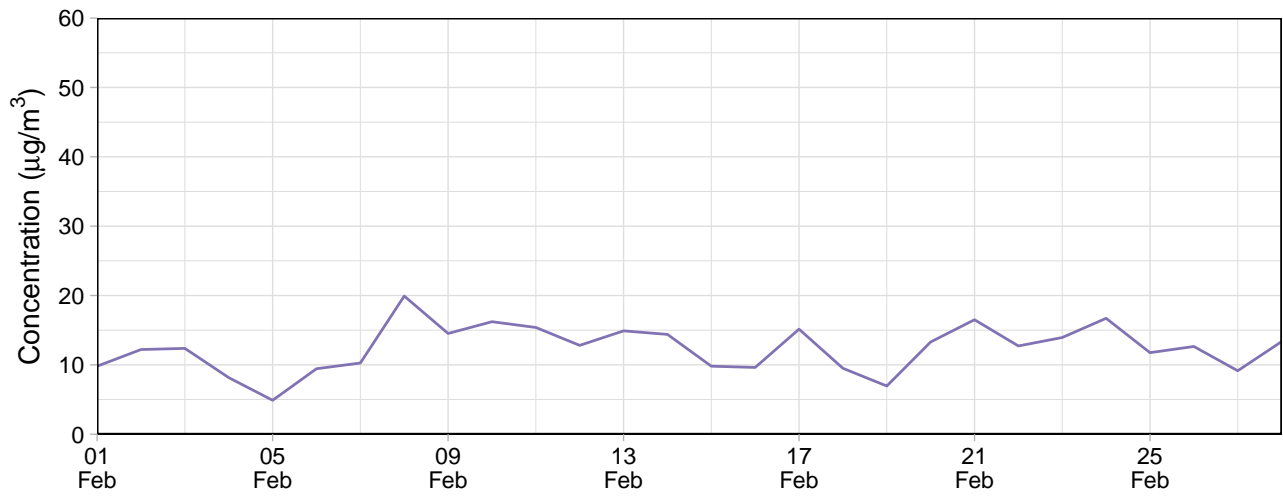


Frequency of counts by wind direction (%)

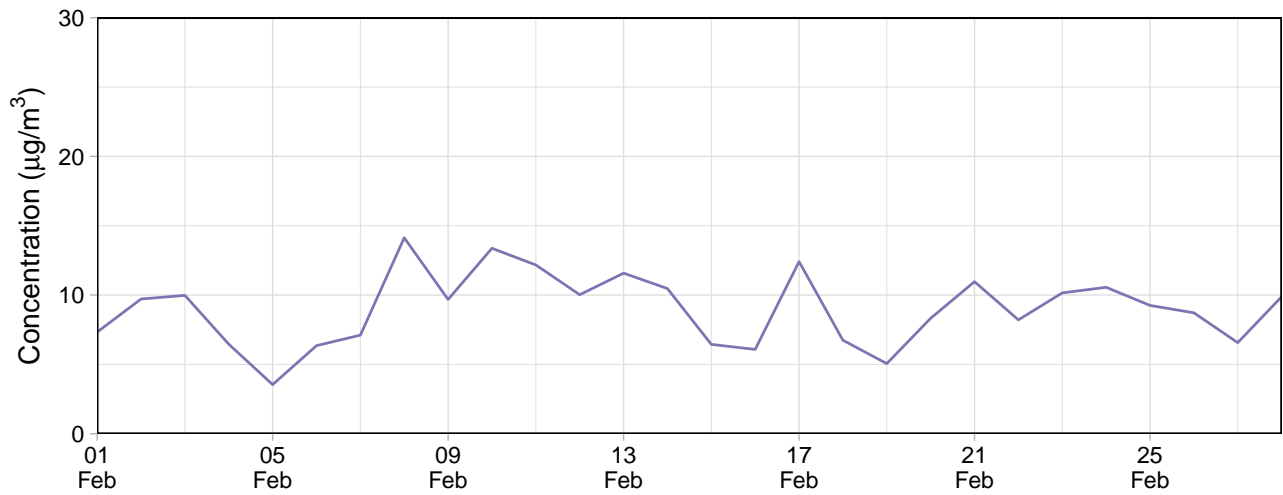


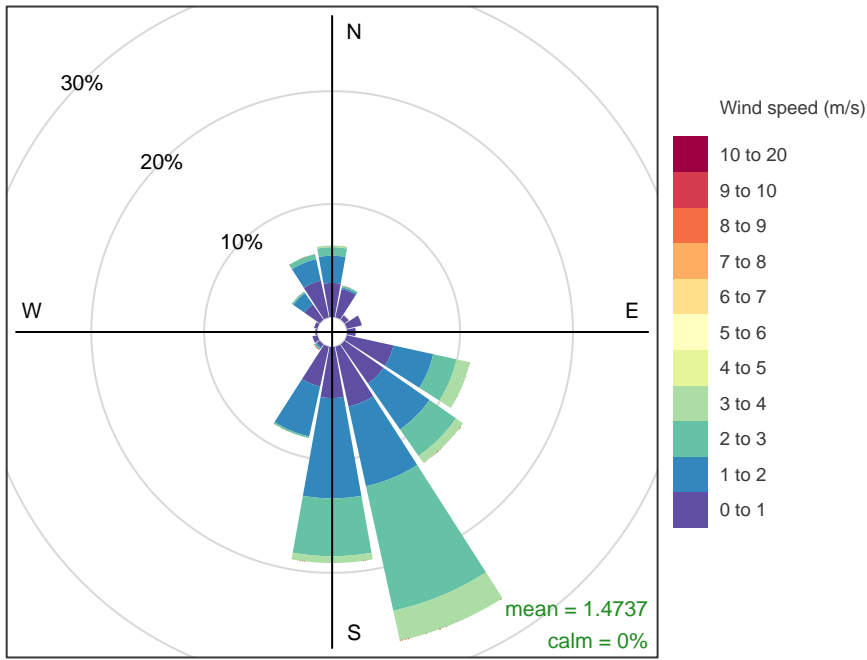
Eastern Grounds

Eastern Grounds – 24-hour average PM₁₀

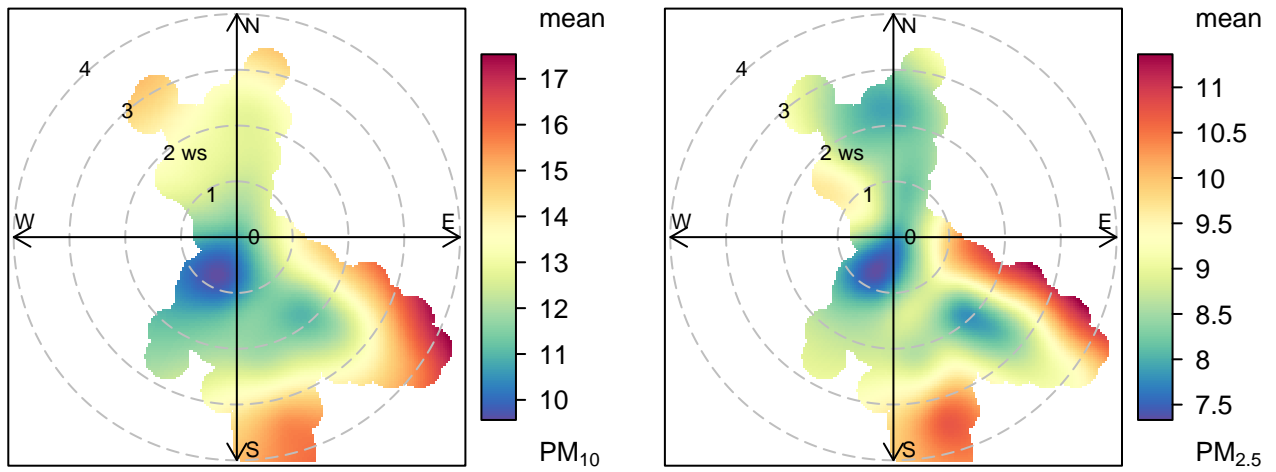


Eastern Grounds – 24-hour average PM_{2.5}



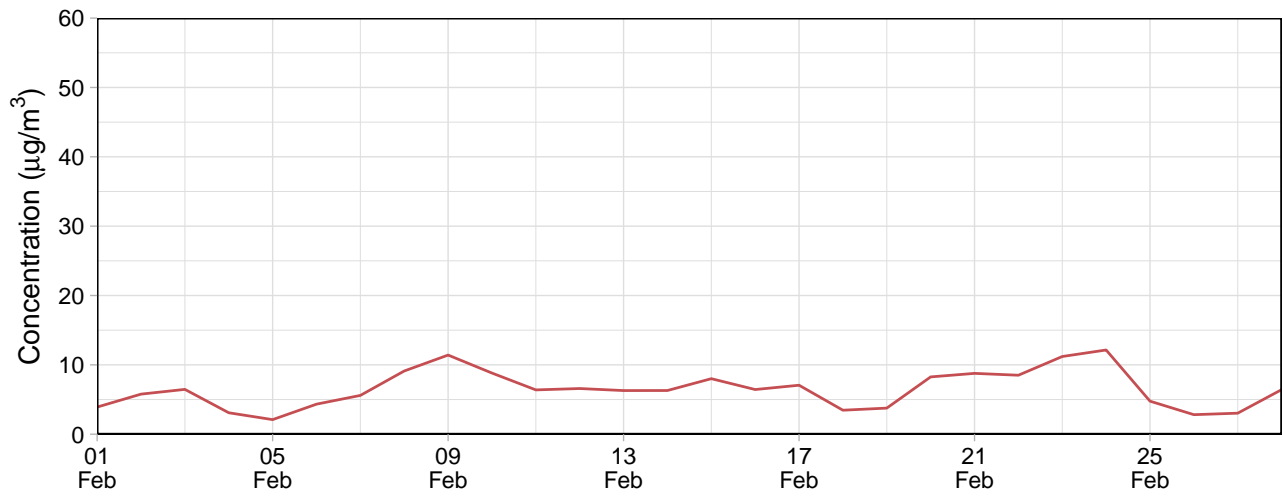


Frequency of counts by wind direction (%)

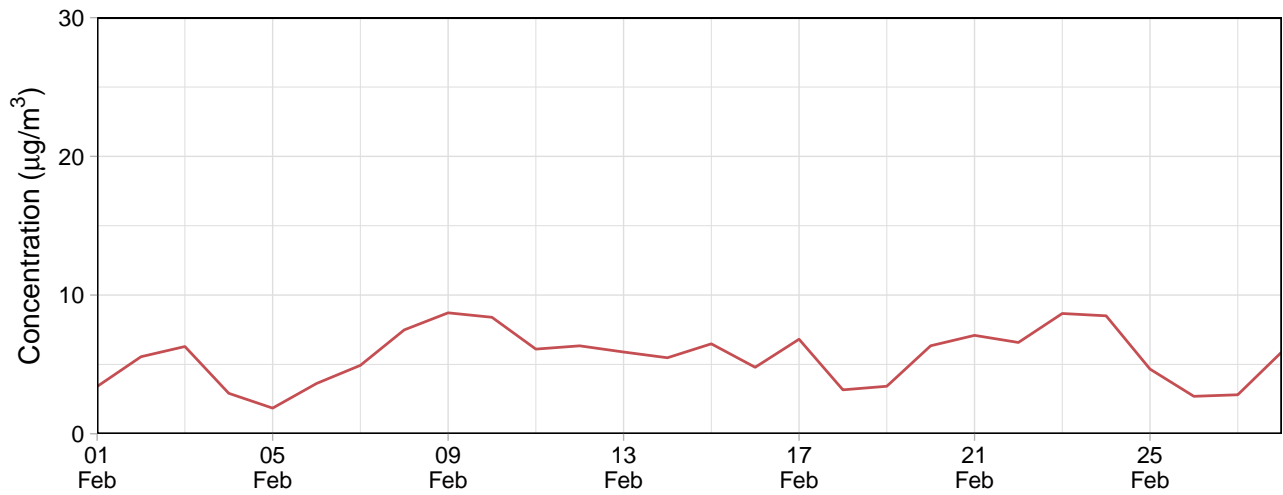


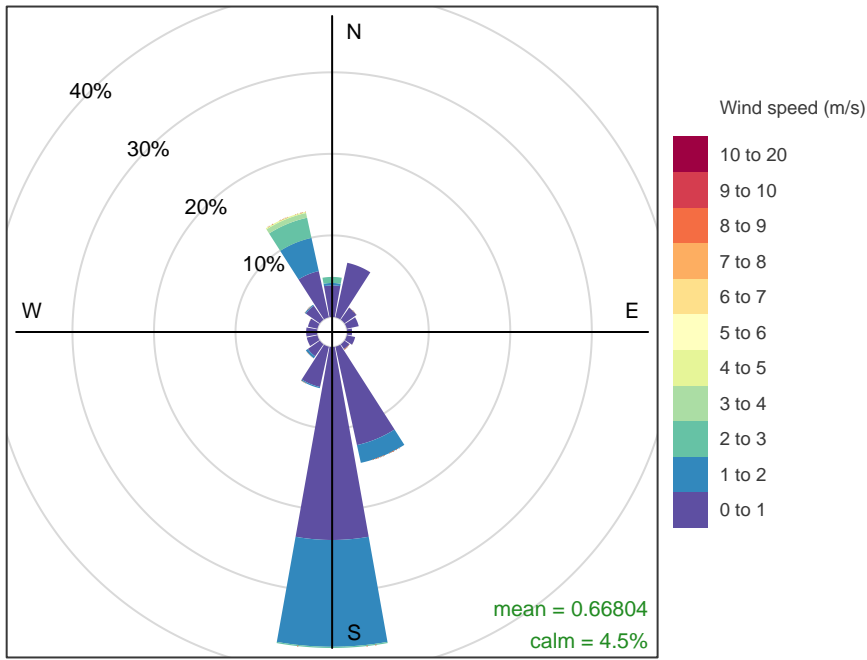
Southern Grounds

Southern Grounds – 24-hour average PM₁₀

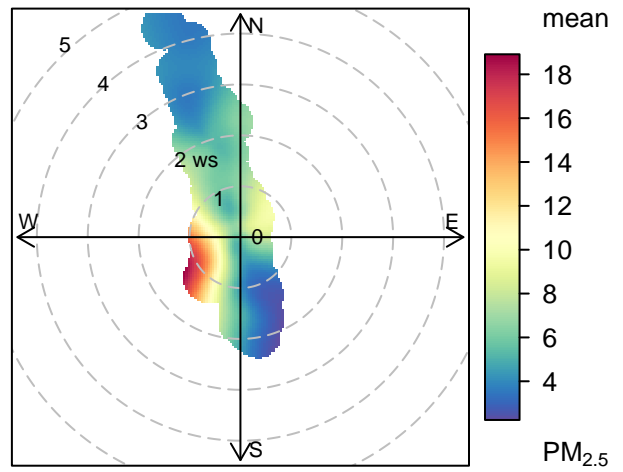
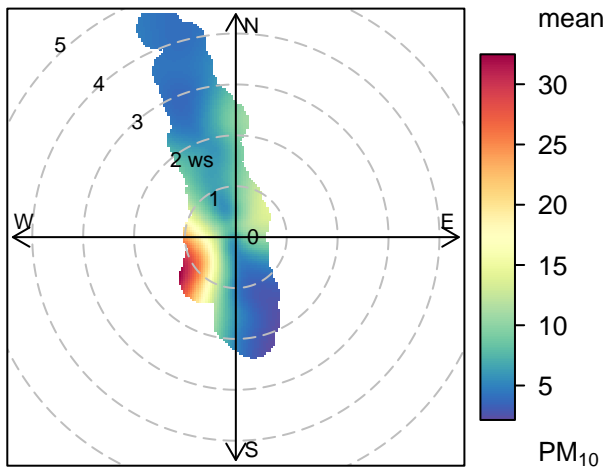


Southern Grounds – 24-hour average PM_{2.5}



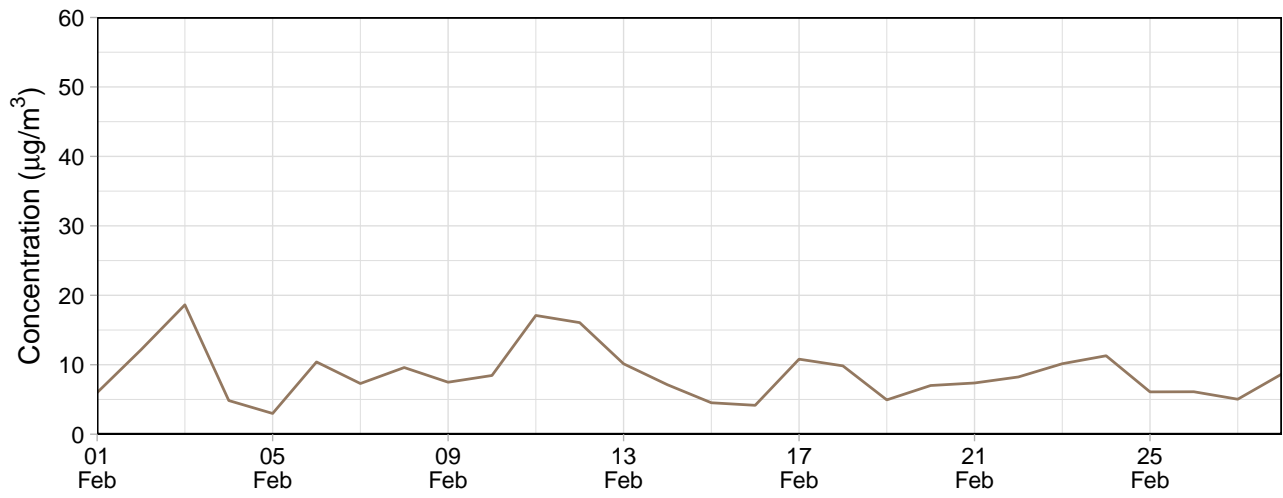


Frequency of counts by wind direction (%)

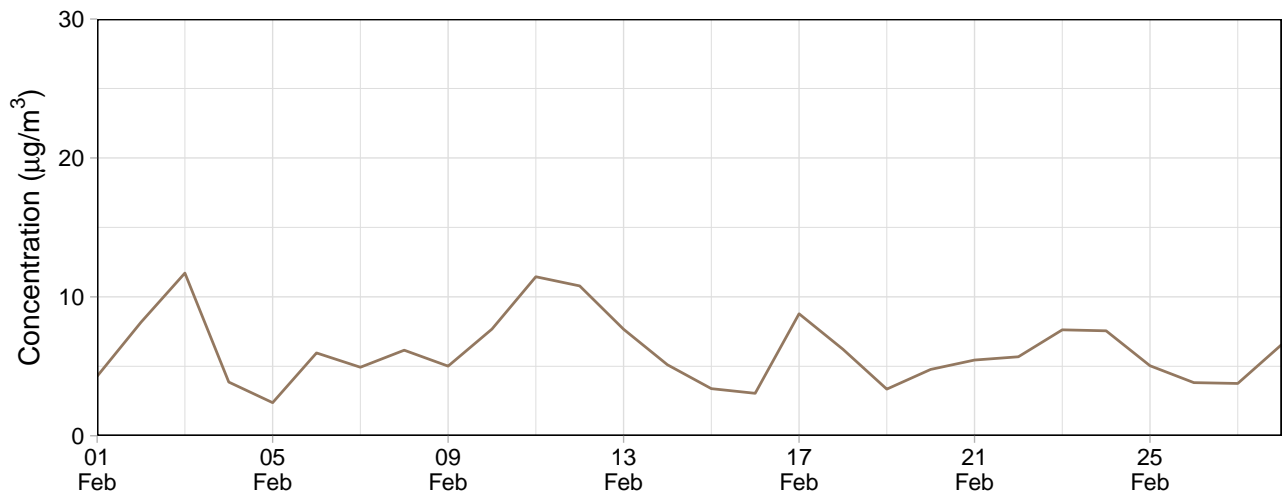


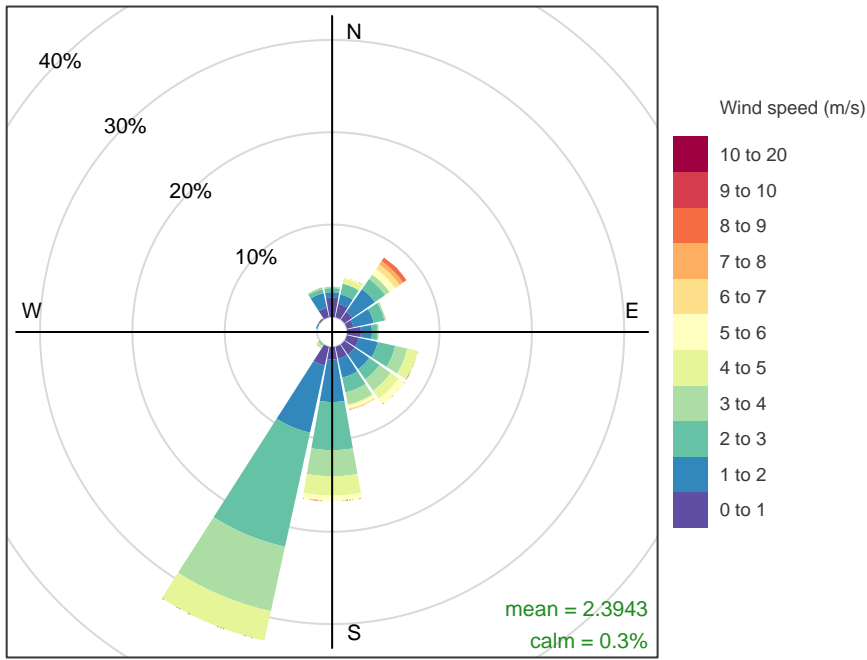
Block 9

Block 9 – 24-hour average PM₁₀

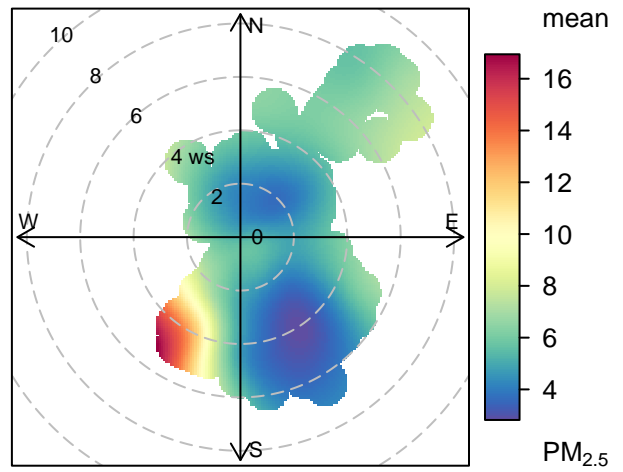
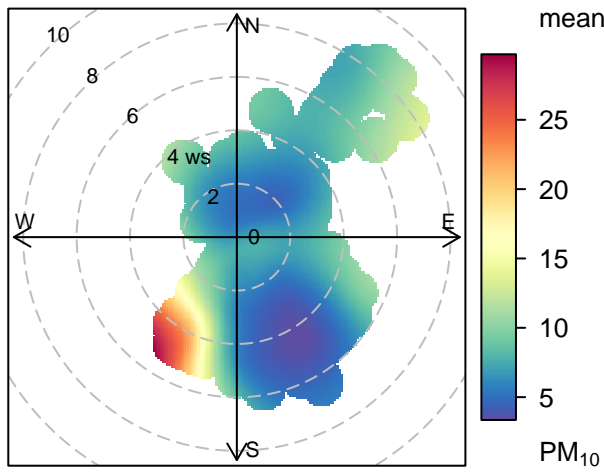


Block 9 – 24-hour average PM_{2.5}





Frequency of counts by wind direction (%)



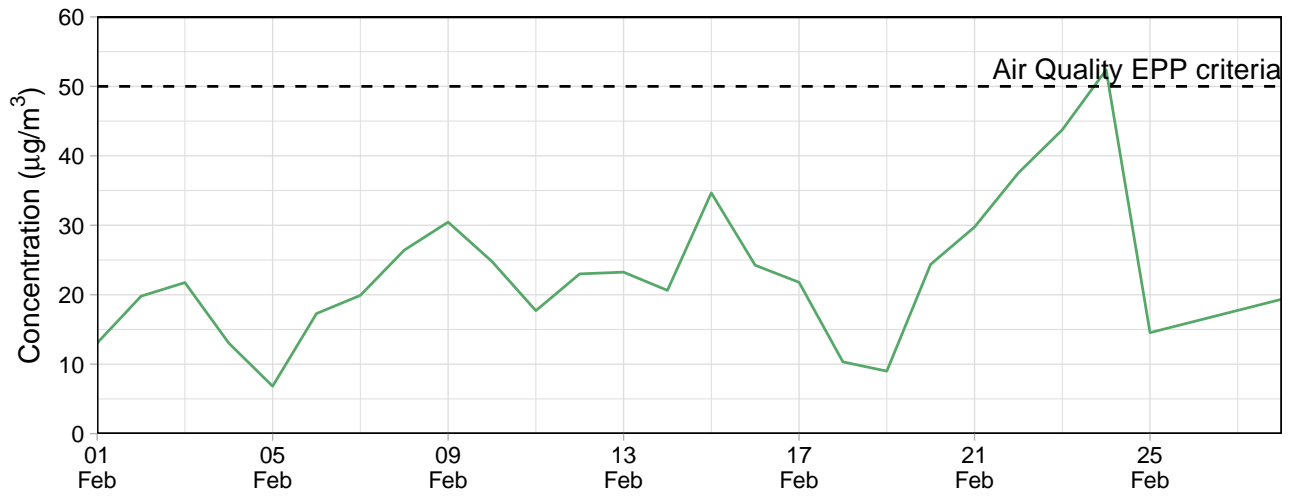
EPA Monitoring

Le Fevre 1

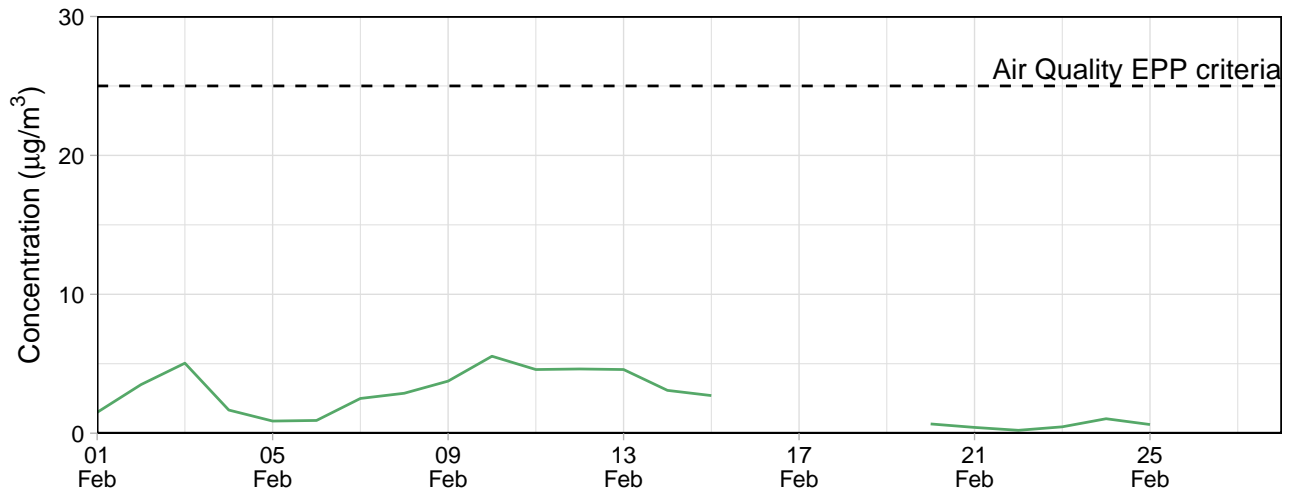
Table 3: Summary of 24-hour average data collected at EPA monitors ($\mu\text{g}/\text{m}^3$)

Site	PM ₁₀				PM _{2.5}			
	Min	Avg	Max	Capture (%)	Min	Avg	Max	Capture (%)
Le Fevre 1	6.8	23.1	52.4	100	-2	1.9	5.5	100

Le Fevre 1 – 24-hour average PM₁₀



Le Fevre 1 – 24-hour average PM_{2.5}



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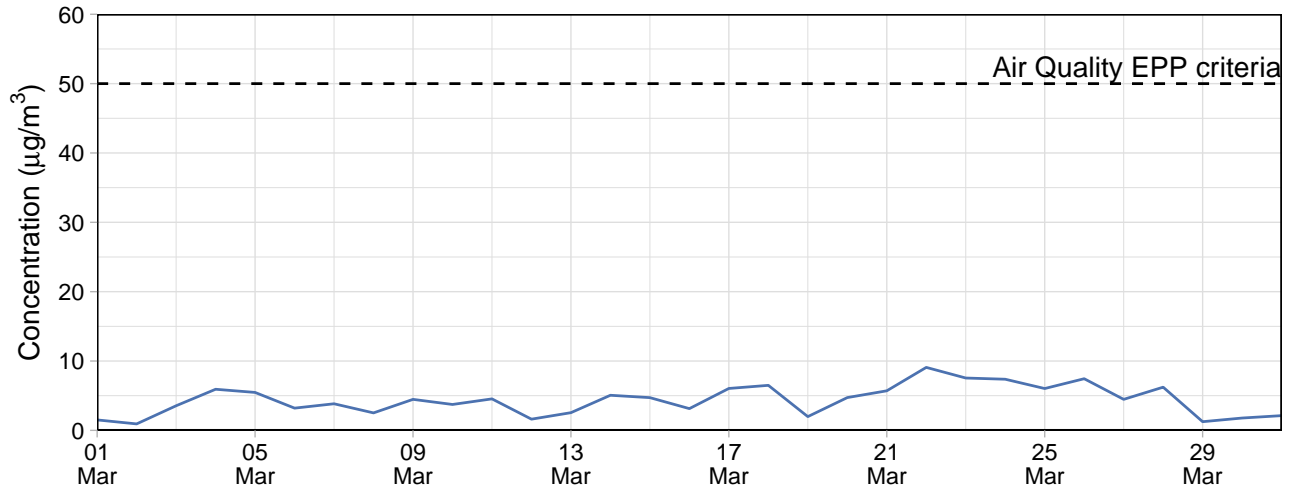
Public Monitors

Table 1: Summary of 24-hour average data collected at public monitors ($\mu\text{g}/\text{m}^3$)

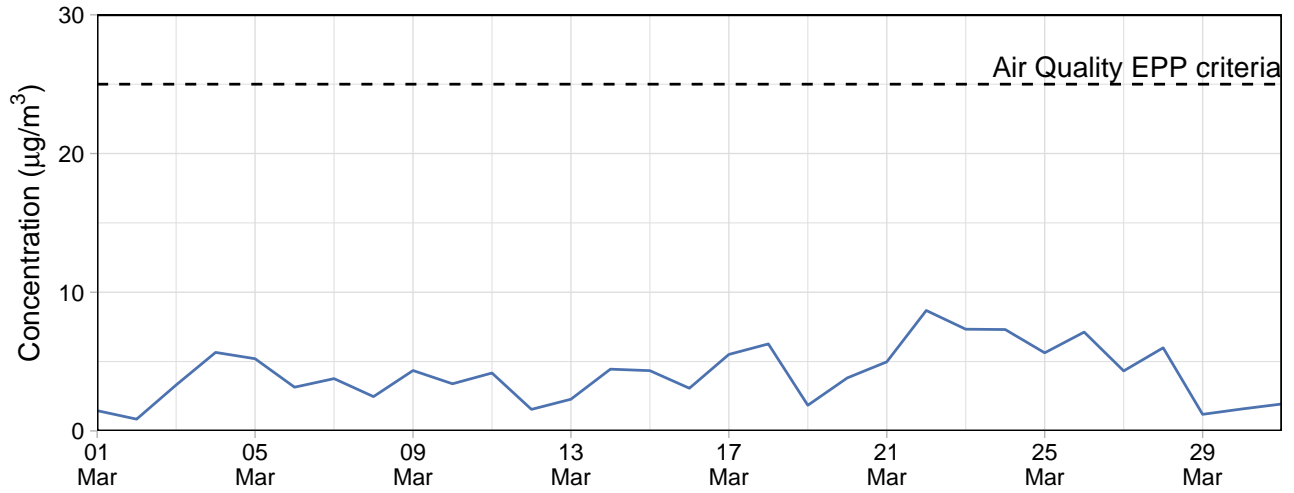
Site	PM ₁₀				PM _{2.5}			
	Min	Avg	Max	Capture (%)	Min	Avg	Max	Capture (%)
Community Park	0.9	4.4	9.1	100	0.8	4.1	8.7	100

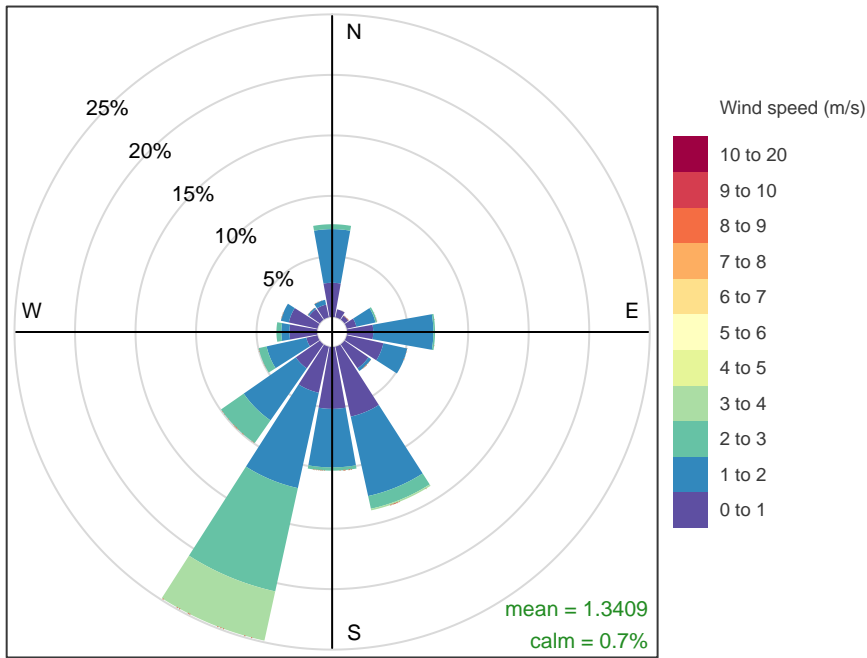
Community Park

Community Park – 24-hour average PM₁₀

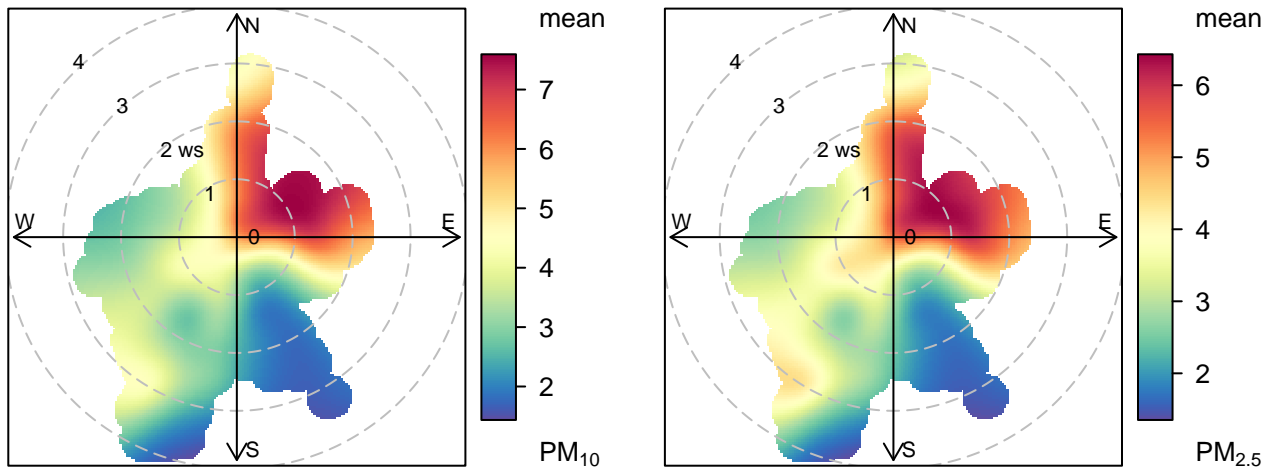


Community Park – 24-hour average PM_{2.5}





Frequency of counts by wind direction (%)



Gunn Street

No data available for the reporting period.

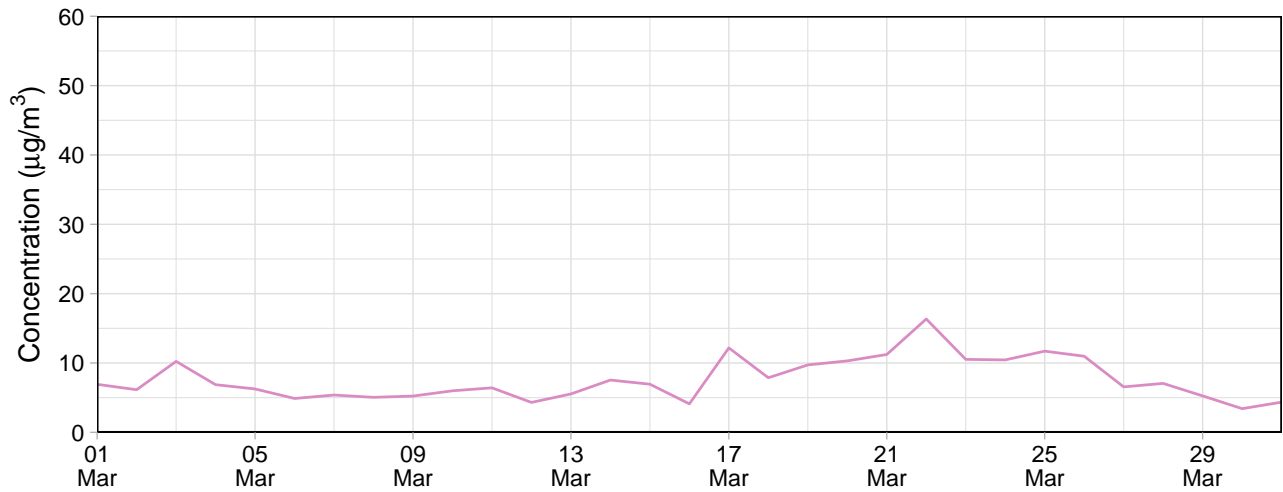
Internal Monitors

Table 2: Summary of 24-hour average data collected at internal monitors ($\mu\text{g}/\text{m}^3$)

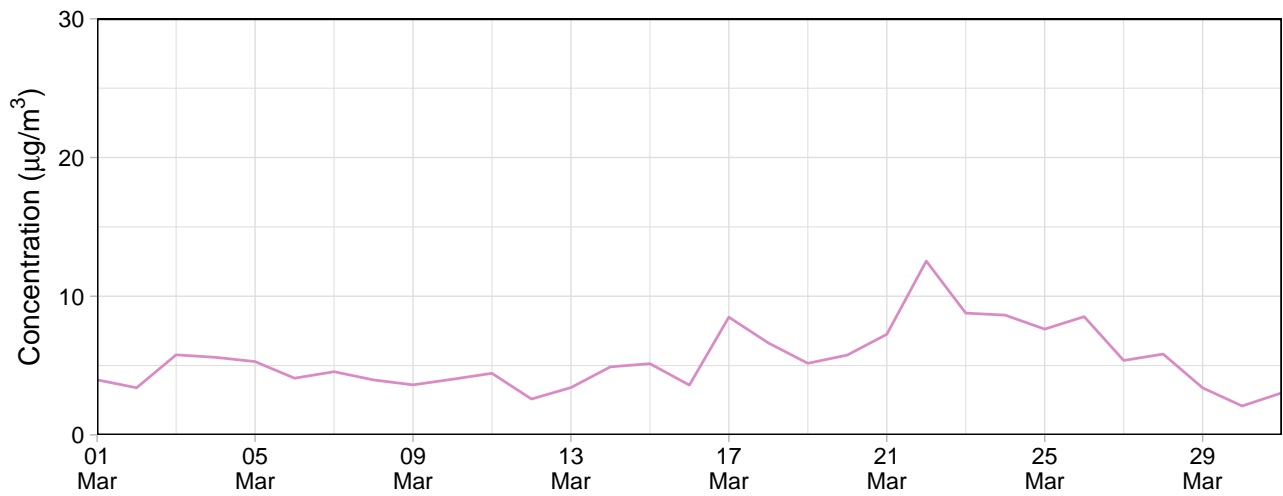
Site	PM ₁₀				PM _{2.5}			
	Min	Avg	Max	Capture (%)	Min	Avg	Max	Capture (%)
Southern Grounds	1.5	5.5	11.8	100	1.3	4.8	10.6	100
Eastern Grounds	5.2	10.7	23.5	100	3.6	7.9	17.4	100
Block 9	2.4	6.0	16.1	100	1.6	4.7	12.6	100
Northern Grounds	3.4	7.6	16.3	100	2.1	5.4	12.5	100

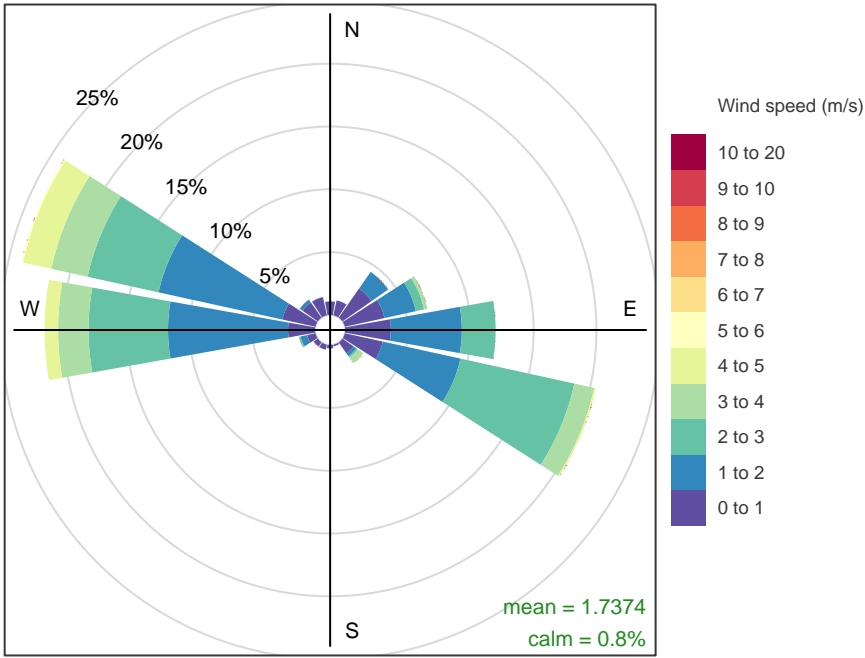
Northern Grounds

Northern Grounds – 24-hour average PM₁₀

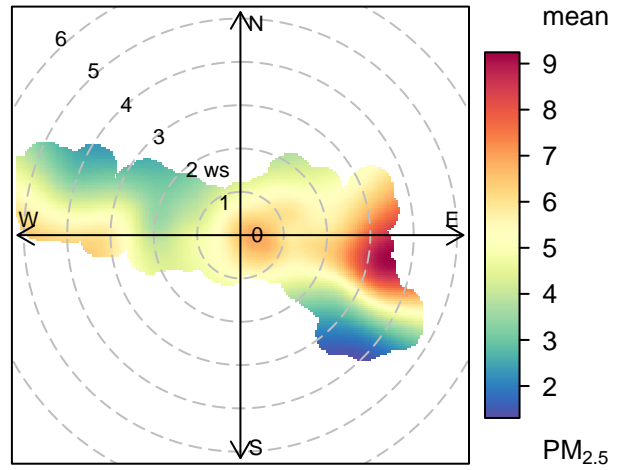
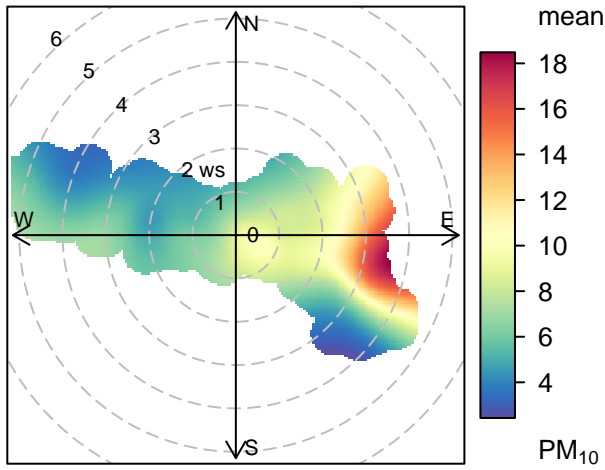


Northern Grounds – 24-hour average PM_{2.5}



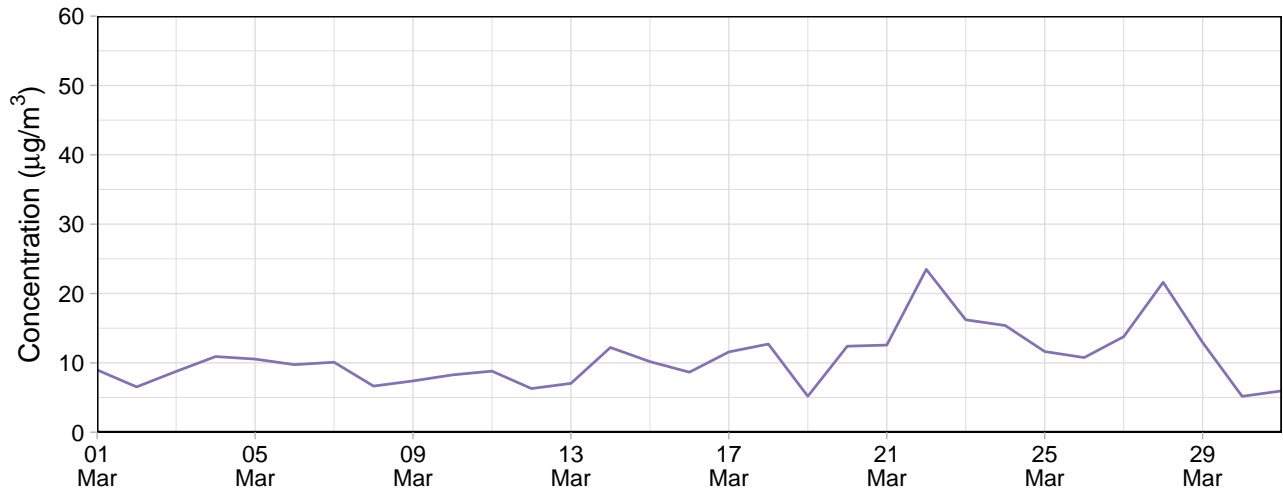


Frequency of counts by wind direction (%)

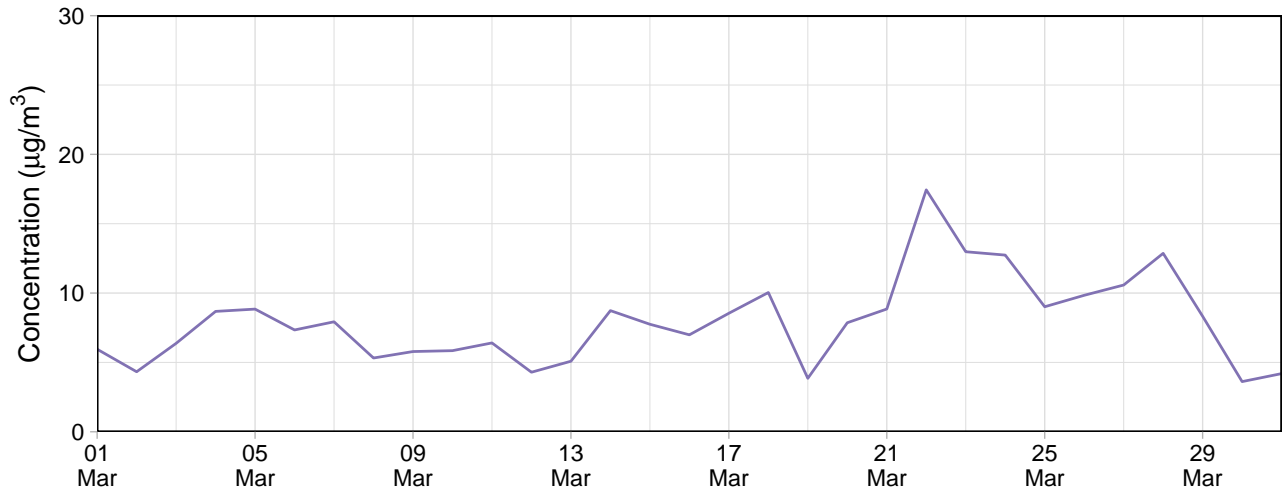


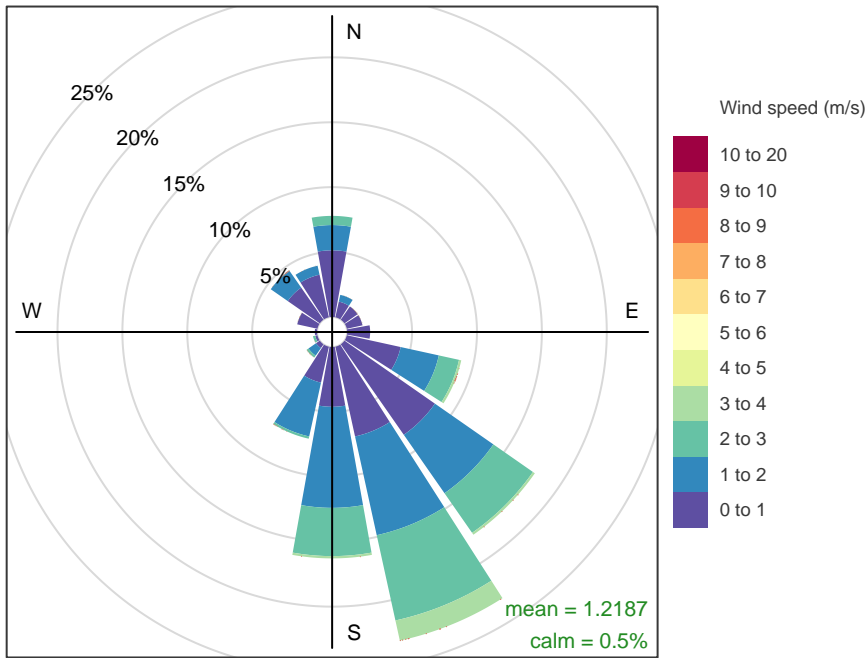
Eastern Grounds

Eastern Grounds – 24-hour average PM₁₀

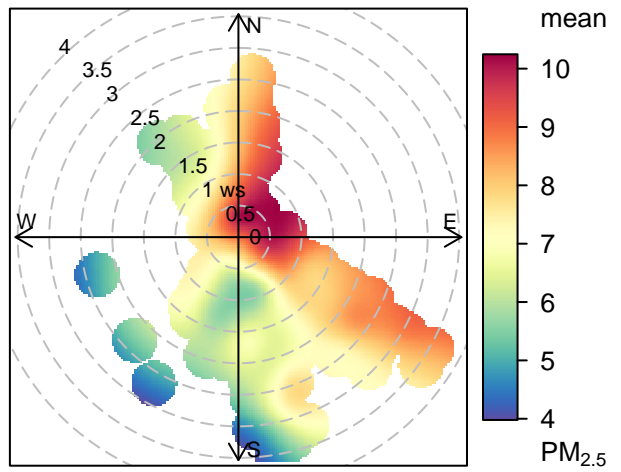
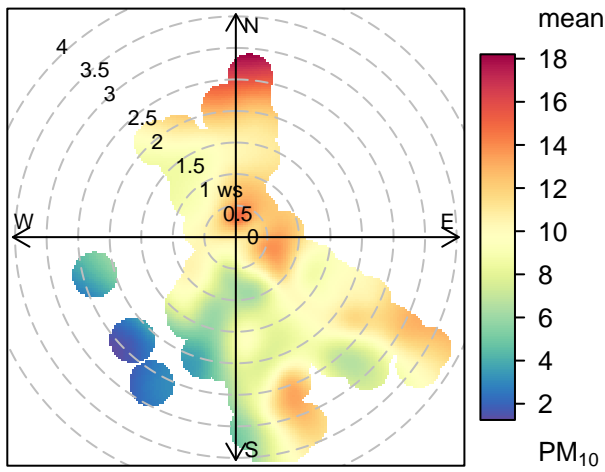


Eastern Grounds – 24-hour average PM_{2.5}



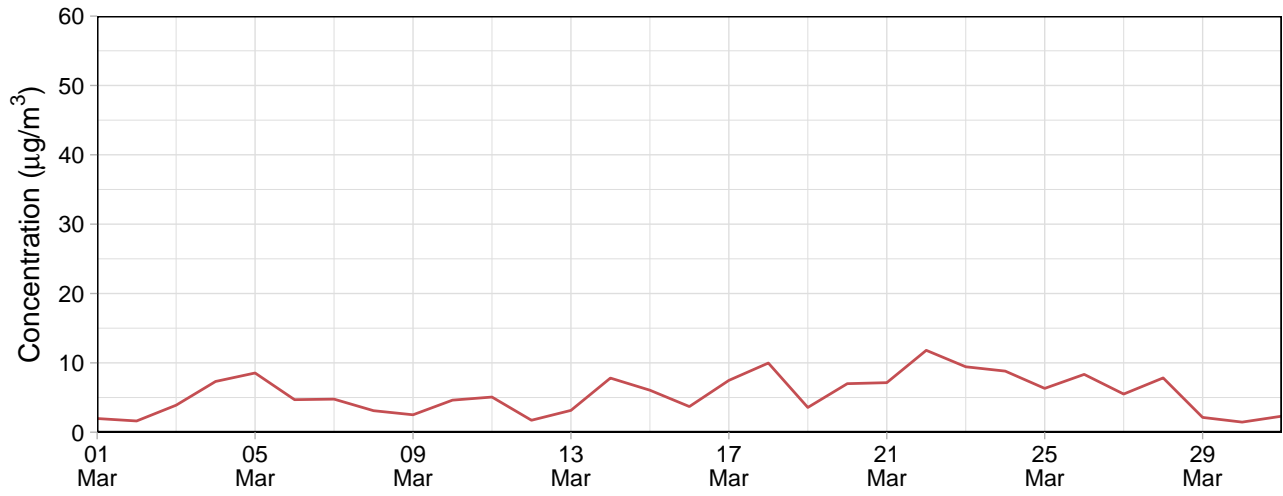


Frequency of counts by wind direction (%)

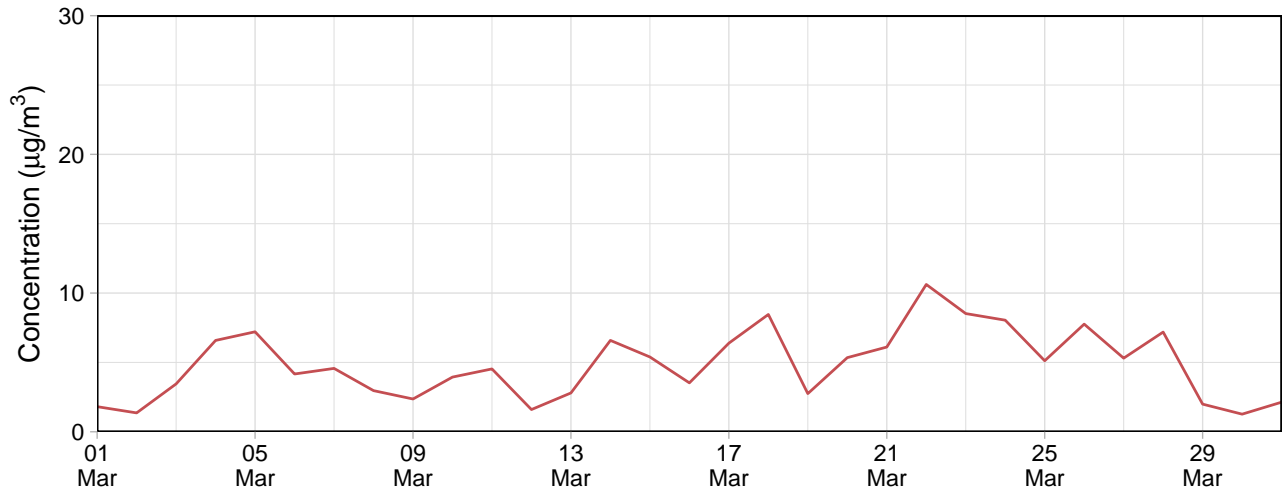


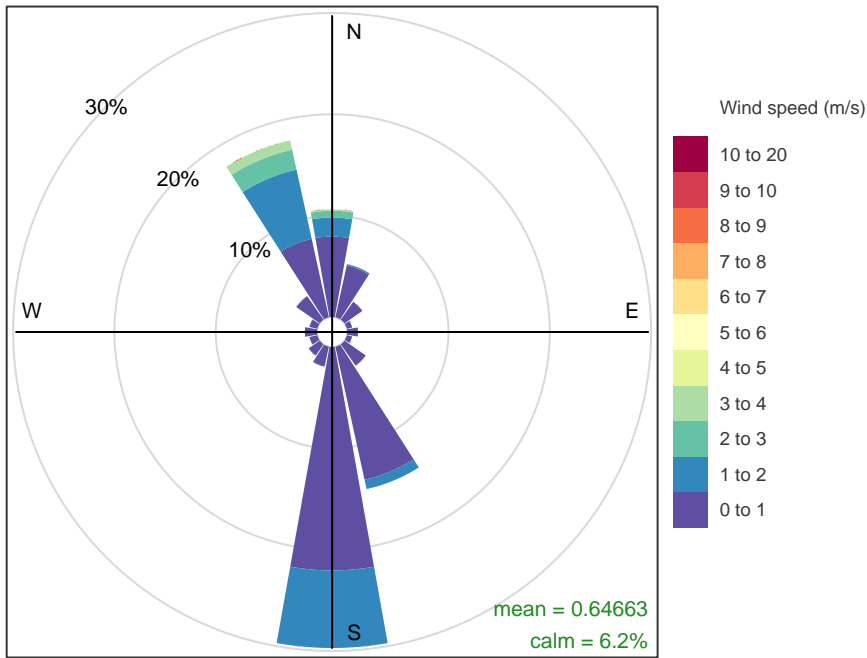
Southern Grounds

Southern Grounds – 24-hour average PM₁₀

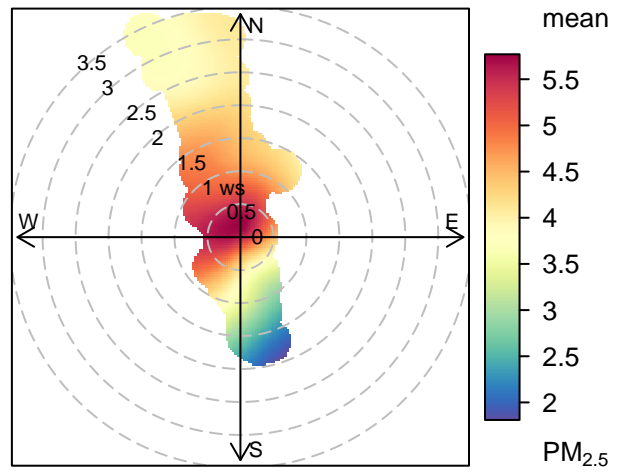
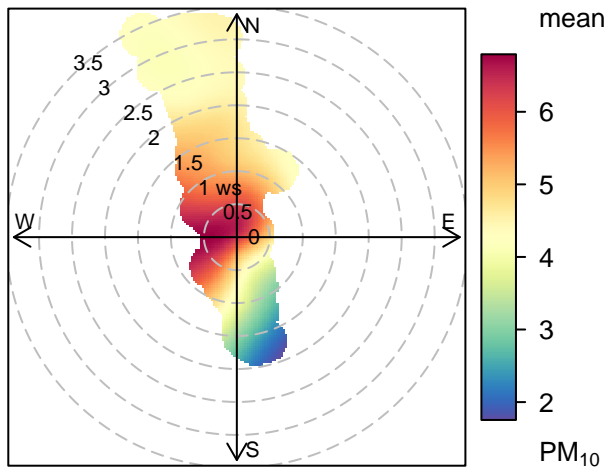


Southern Grounds – 24-hour average PM_{2.5}



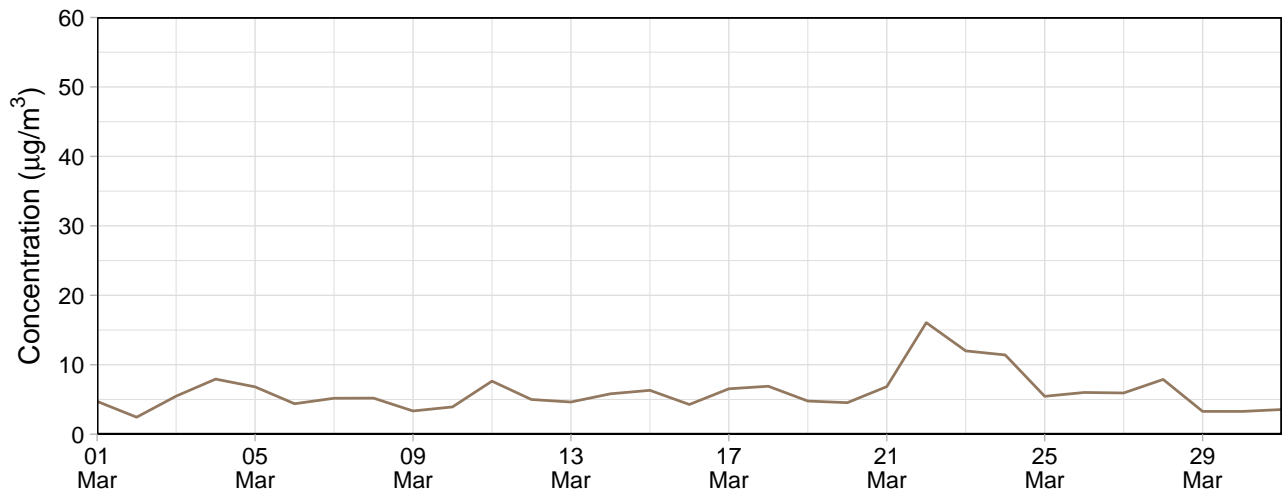


Frequency of counts by wind direction (%)

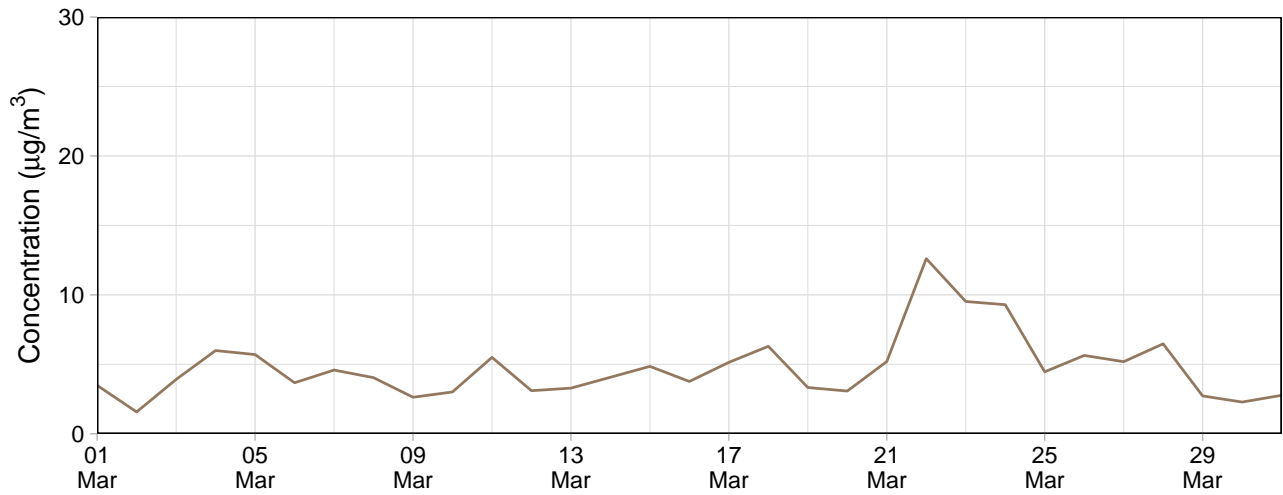


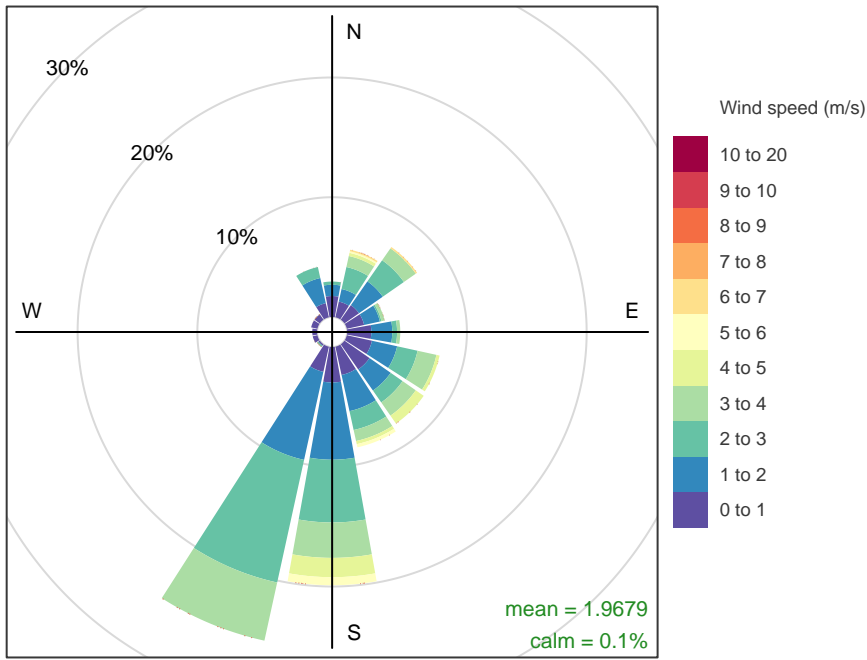
Block 9

Block 9 – 24-hour average PM₁₀

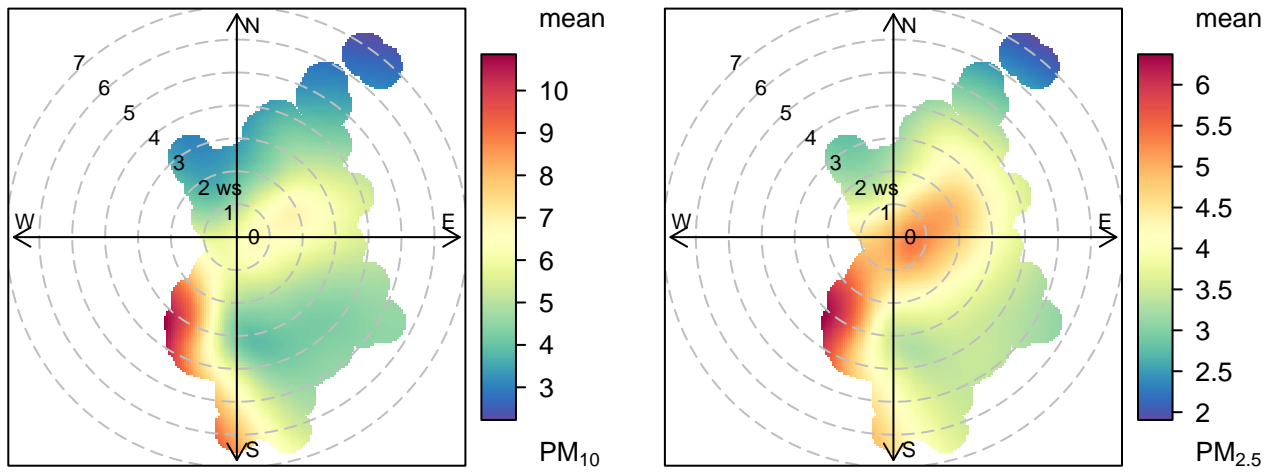


Block 9 – 24-hour average PM_{2.5}





Frequency of counts by wind direction (%)



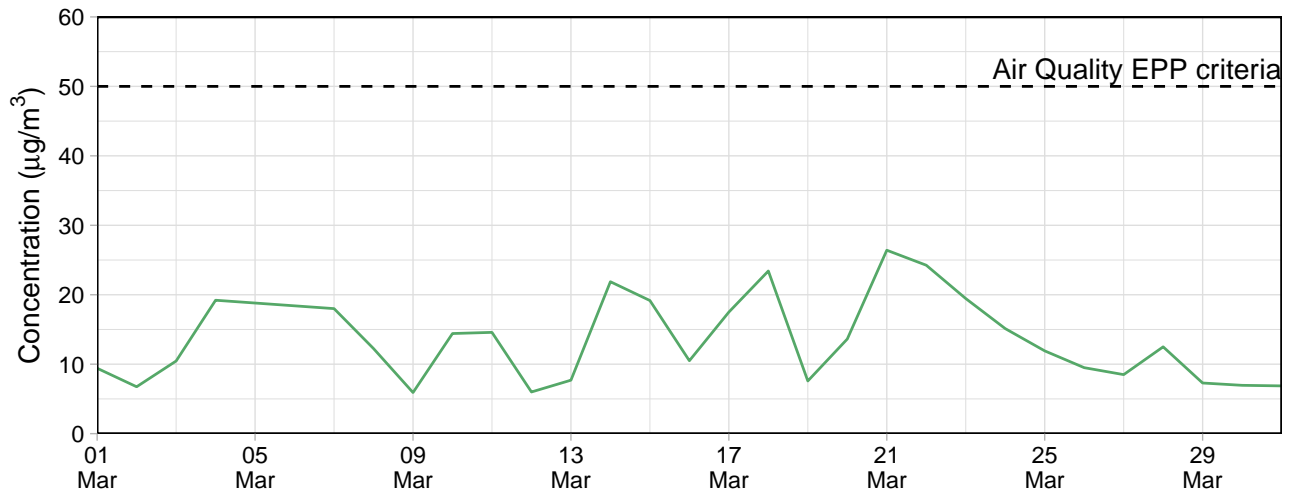
EPA Monitoring

Le Fevre 1

Table 3: Summary of 24-hour average data collected at EPA monitors ($\mu\text{g}/\text{m}^3$)

Site	PM ₁₀				PM _{2.5}			
	Min	Avg	Max	Capture (%)	Min	Avg	Max	Capture (%)
Le Fevre 1	5.9	13.3	26.4	100	-2.3	0.9	5.6	100

Le Fevre 1 – 24-hour average PM₁₀



Le Fevre 1 – 24-hour average PM_{2.5}

