

# **Monthly Air Quality**

**November 2025**

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## Note

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# 1. INTRODUCTION

This monthly air quality report provided by the Richards Bay Clean Air Association (RBCAA) offers a comprehensive overview of air quality monitoring data for the specific month under review. It aims to provide a detailed analysis of meteorology, sulphur dioxide (SO<sub>2</sub>), total reduced sulphur (TRS), and particulate matter (PM) levels measured by the RBCAAs monitoring network. Each monthly report focuses on a single calendar month, highlighting any notable incidents or exceedances of the applicable ambient air quality standards during that period. By analysing the monthly data, trends and patterns in air quality can be identified, helping to assess potential environmental impacts and mitigate any adverse effects.

In addition to the monthly reports, RBCAA publishes annual air quality reports summarising the key findings and trends observed over a complete calendar year. These annual reports provide a comprehensive overview of the region's overall air quality performance and long-term trends. They provide stakeholders with a thorough understanding of air quality and serve as a valuable tool for informed decision-making, policy development, and environmental management. By consistently monitoring and reporting air quality data, the RBCAA aims to promote transparency, facilitate ongoing environmental assessments, and ensure the well-being of the local community and the surrounding environment.

The RBCAA monitoring network comprises ten (10) stations (Figure 1.1 and Table 1.1).



Figure 1.1: RBCAA monitoring network.

Table 1.1: Station coordinates.

Station	Latitude	Longitude	Elevation (m)
Airport	-28.738138	32.093333	34
Arboretum	-28.752385	32.062738	30
Brackenham	-28.731301	32.039016	51
CBD	-28.744719	32.054805	32
eSikhaleni	-28.865244	31.911679	13
Felixton	-28.829229	31.893536	51
Felixton Met	-28.836487	31.892513	30
Harbour West	-28.787286	32.027065	6
Richardia	-28.762776	32.066072	20
Scorpio	-28.769692	32.034228	31

## 2. METEOROLOGY

### 2.1. Data Availability

The percentage of valid data received from the meteorological network for November 2025 is shown in Table 2.1.

Table 2.1: Meteorological data capture.

Station	Availability (%)	Wind (%)	Temperature (%)	Relative Humidity (%)	Pressure (%)	Solar Radiation (%)	Rain (%)
Airport	98	98	98	98	98	98	-
Arboretum	100	97	100	-	-	-	-
Brackenham	100	100	100	-	-	-	-
CBD	99	<b>91</b>	<b>91</b>	<b>91</b>	-	-	-
CBD Rain	99	-	-	-	-	-	99
eSikhaleni	99	99	99	99	-	-	-
Felixton Met	100	100	100	100	-	-	-
Harbour West	100	100	100	-	-	-	-

**Notes:**

1. Red - Not acceptable for statistical purposes (<80%),
2. Orange – Does not meet SANAS data capture requirements (<90%),
3. Yellow – RBCAA reporting requirement (<=95%)

**Missing Data (Station and Meteorology):**

- Air – Power outage (1 day/s with <80% data capture, 23 November 2025).
- CBD (Station) – UPS commissioning (3 day/s with <80% data capture, 28-30 November 2025).
- eSk – Power outage (1 day/s with <80% data capture, 13 November 2025).

## 2.2. Wind Roses

Monthly wind roses for November 2024 and 2025 for Arboretum are presented in Figure 2.1. They indicate that the wind blew predominantly along the NE and SW axes. NE wind is generally associated with fair weather, while SW wind is usually associated with the passage of coastal lows, cold fronts, and inclement weather.

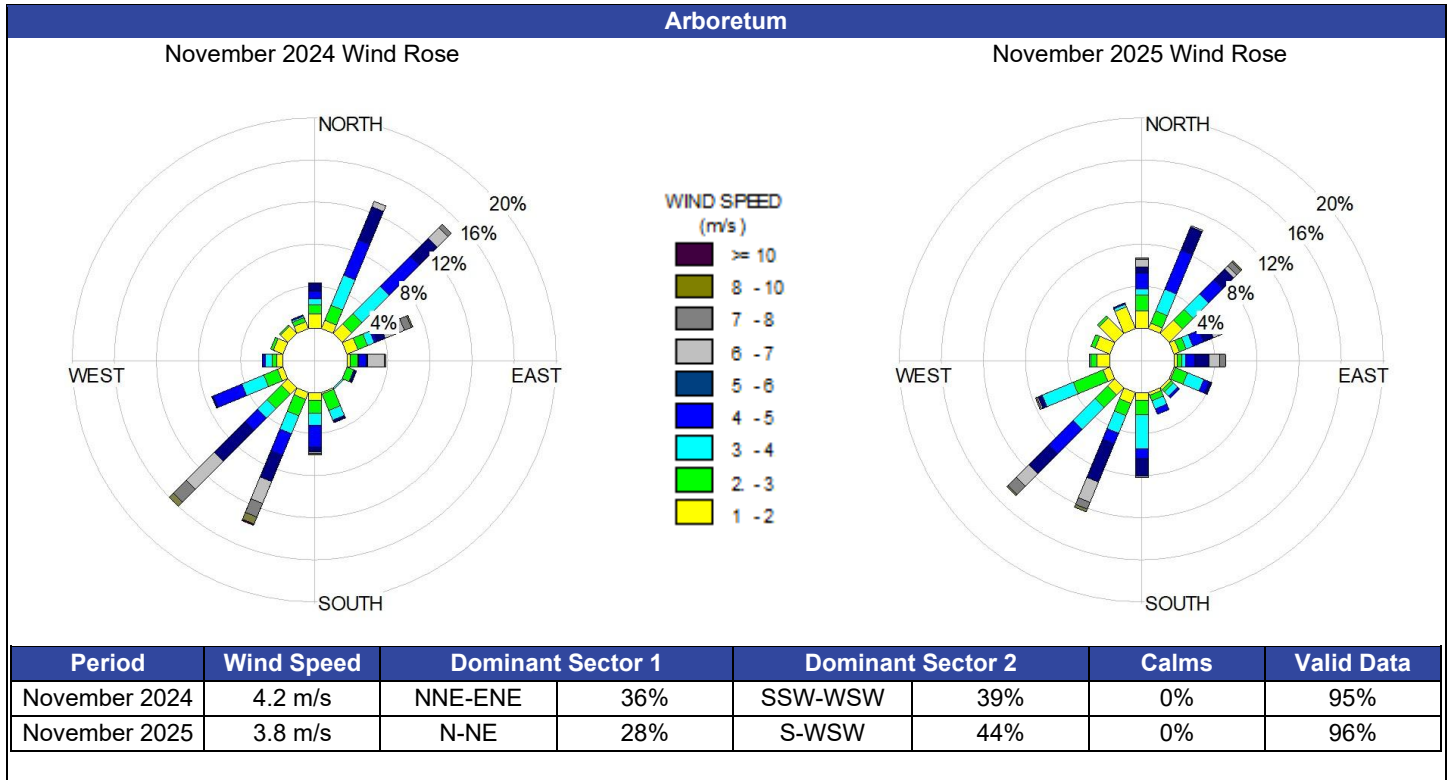


Figure 2.1: Wind roses - monthly.

Typically, there is an increase in light (1 to 3 m/s) to moderate (3 to 6 m/s) wind from the NNW during periods that include autumn and winter conditions and the seasonal increase in fresh (6 to 8 m/s) to strong (> 8 m/s) N to NE wind during periods that include spring and early summer. Strong southerly to SSW winds occur throughout the year and are typically associated with the arrival of coastal lows and cold fronts. Coastal lows are more frequent during the summer, which is why the slightly higher proportion of these winds is observed.

Diurnal wind roses for November 2025 are shown in Figure 2.2. ESE to SSE wind primarily consists of sea breezes during the day and early evening, particularly during the warmer spring and summer months. In contrast, WNW to NNW wind is mainly in the form of land breezes at night and early morning, particularly during the colder and more stable autumn and winter months.

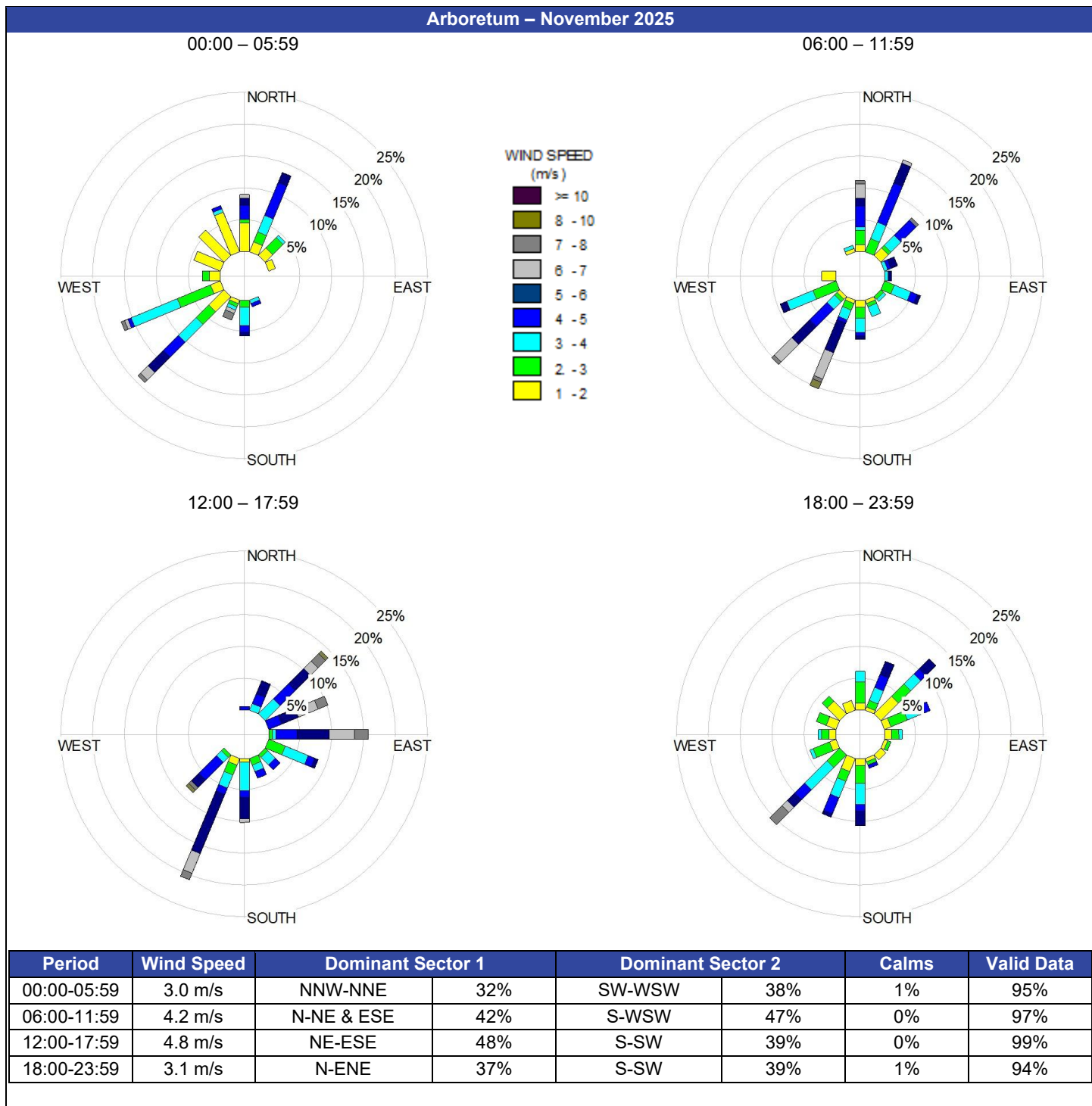


Figure 2.2: Wind roses - diurnal.

### 2.3. Rainfall

Rainfall measured at various locations is presented in Figure 2.3, Figure 2.4, Figure 2.5 and Figure 2.6 (See APPENDIX F for tables).

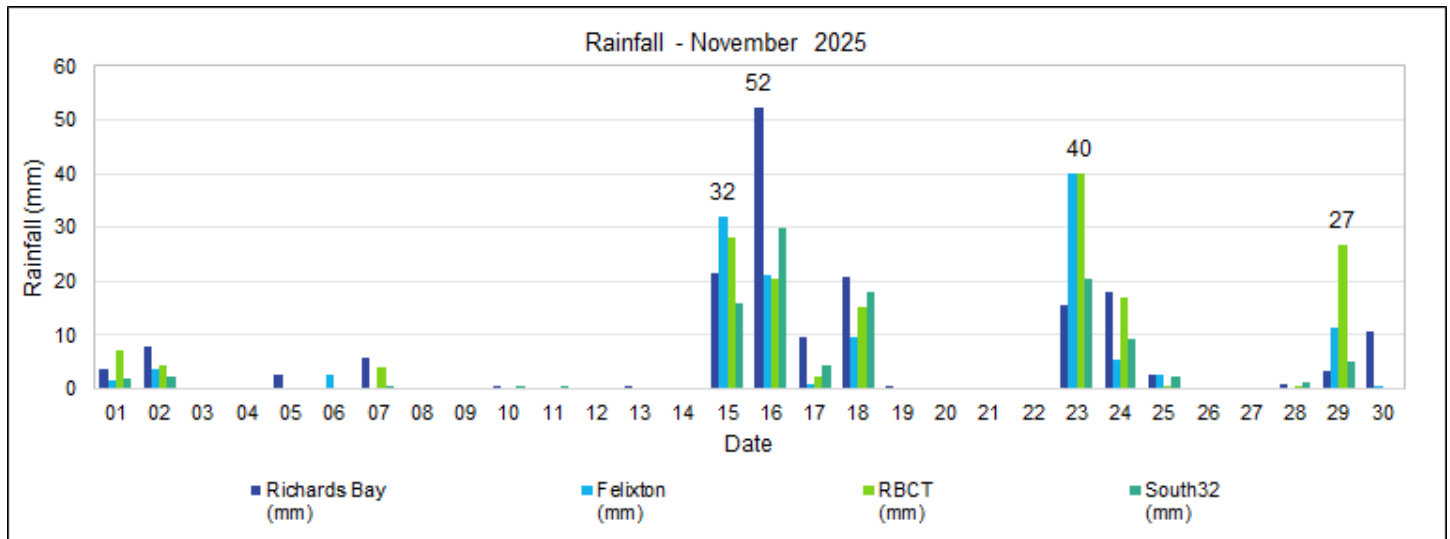


Figure 2.3: Rainfall.

Table 2.2: Rainfall -monthly averages.

Month	Richards Bay (mm)	Felixton (mm)	RBCT (mm)	South32 (mm)	Average (mm)
November 2025	176	131	166	112	146

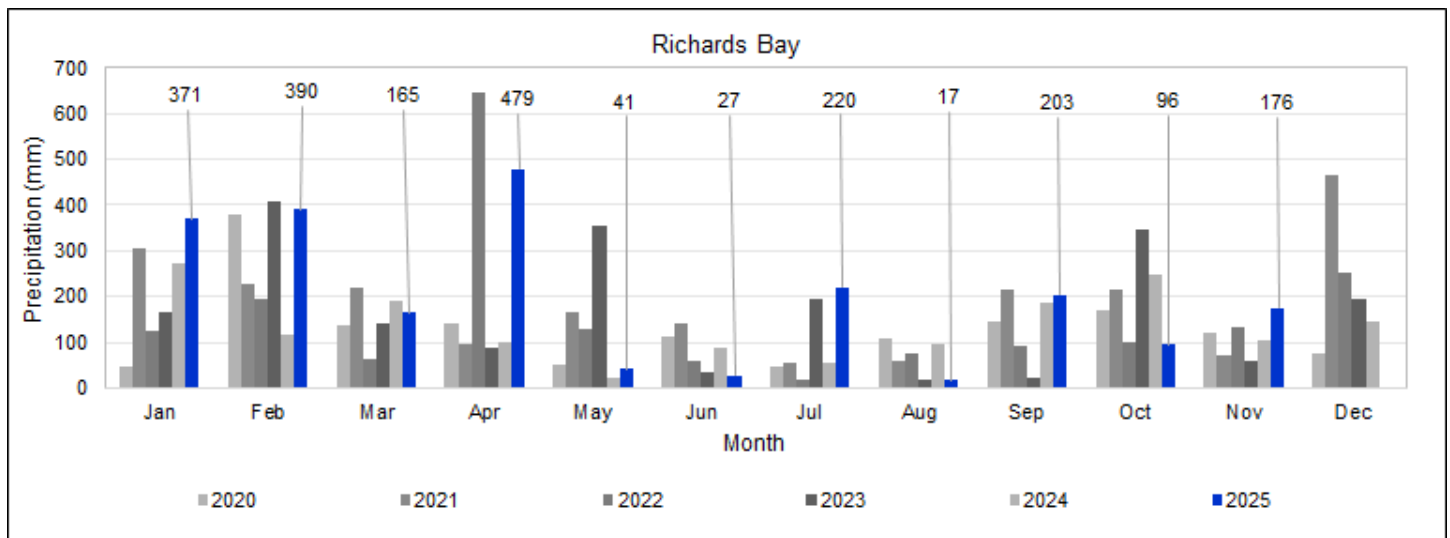


Figure 2.4: Rainfall –Richards Bay.

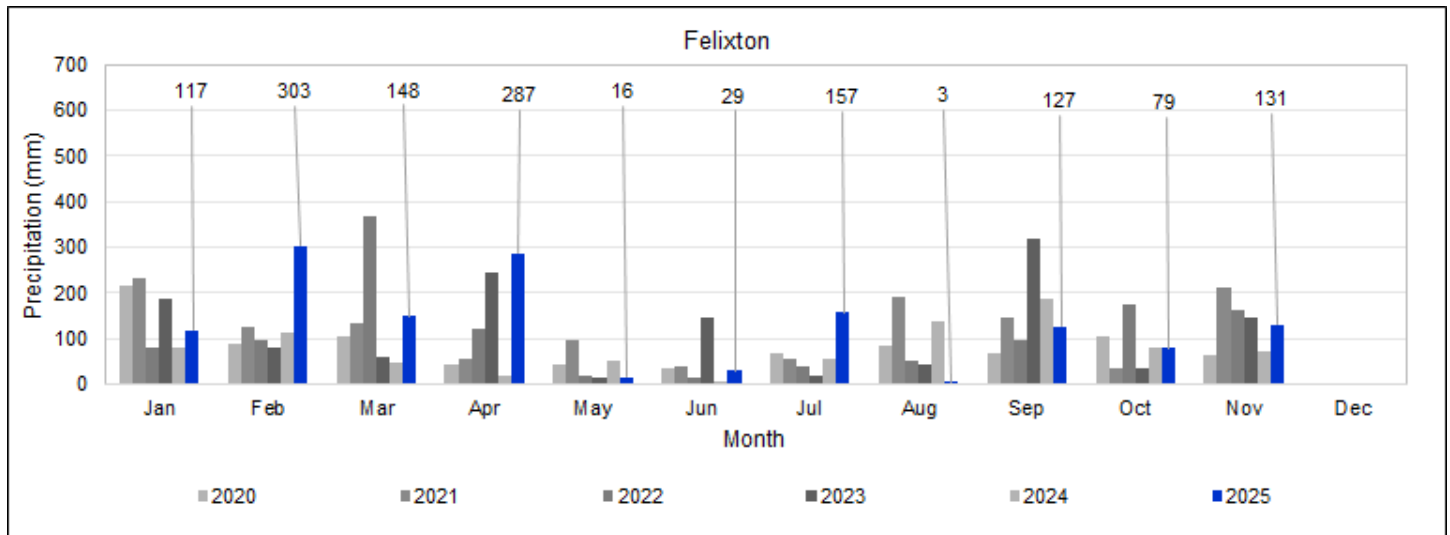


Figure 2.5: Rainfall – Felixton.

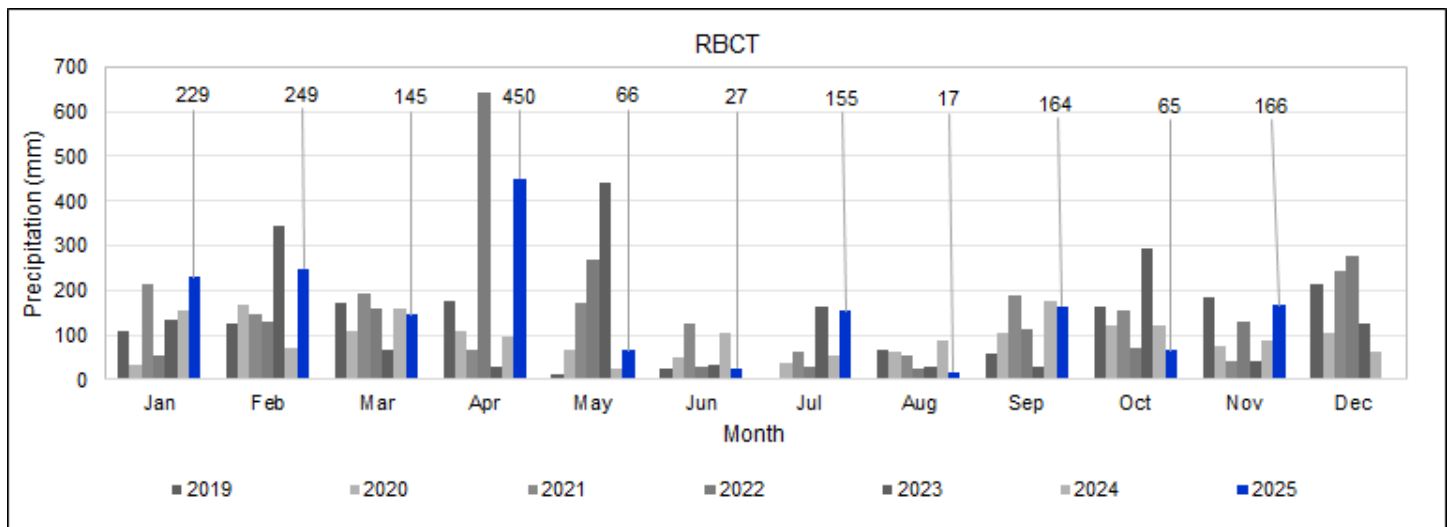


Figure 2.6: Rainfall – RBCT.

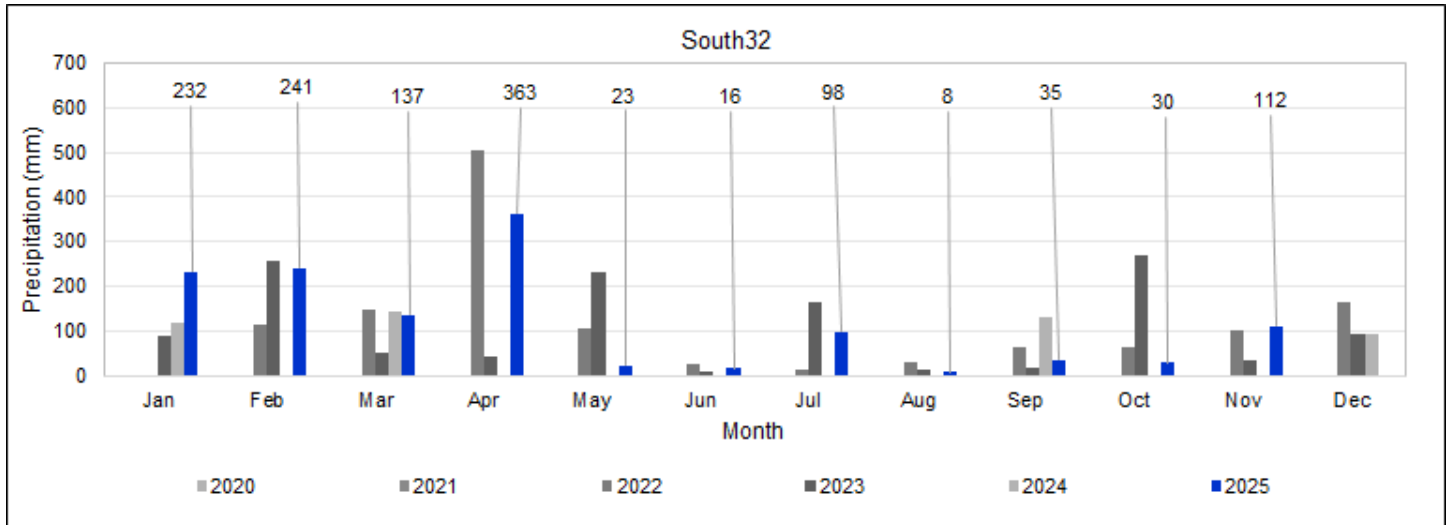


Figure 2.7: Rainfall - South32.  
 Note: South32 has had issues with its rain gauge in 2024.

### 3. AIR QUALITY COMPLAINTS

Detailed complaint records are maintained, updated, and distributed weekly to the RBCAA's complaints mailing list. The following sections summarise and analyse the complaints received during November 2025. Please see APPENDIX F for the Complaints Log.

#### 3.1. Field Observations

Seventeen (17) air quality complaints were received during November 2025; Seven (7) were logged in November 2024. The daily complaints and a monthly historical count are reflected below (Figure 3.1 and Figure 3.2).

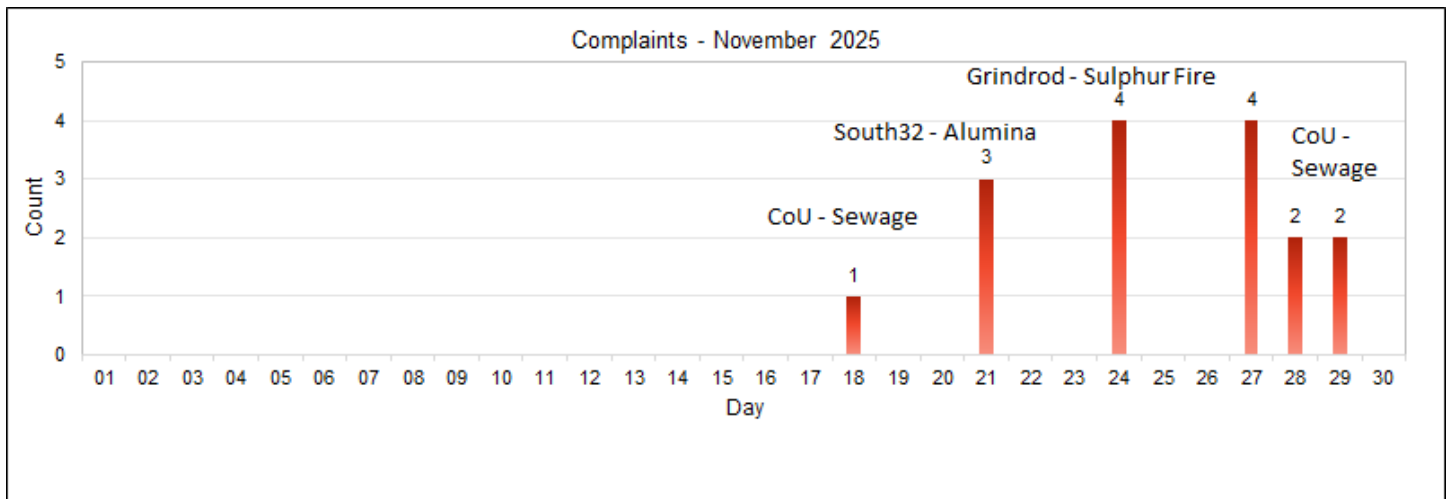


Figure 3.1: Complaints – daily.

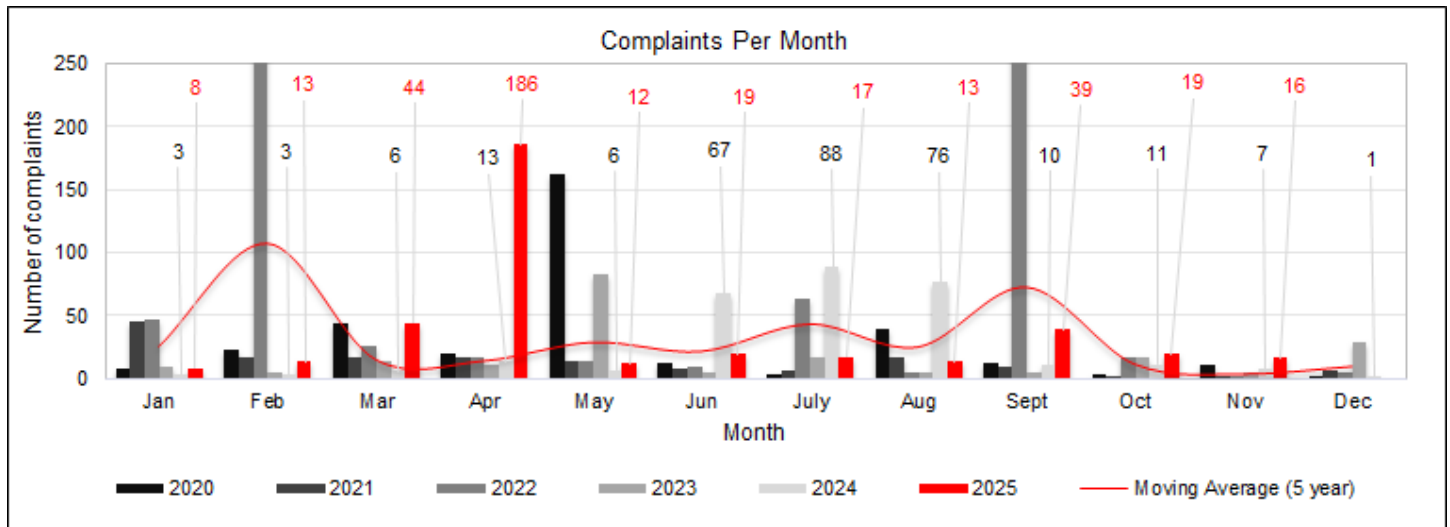


Figure 3.2: Complaints - historical monthly comparison.

### 3.2. Complaints Distribution

The distribution of complaints in November 2025 by region, source and type is presented in Figure 3.3, Figure 3.4, and Figure 3.5.

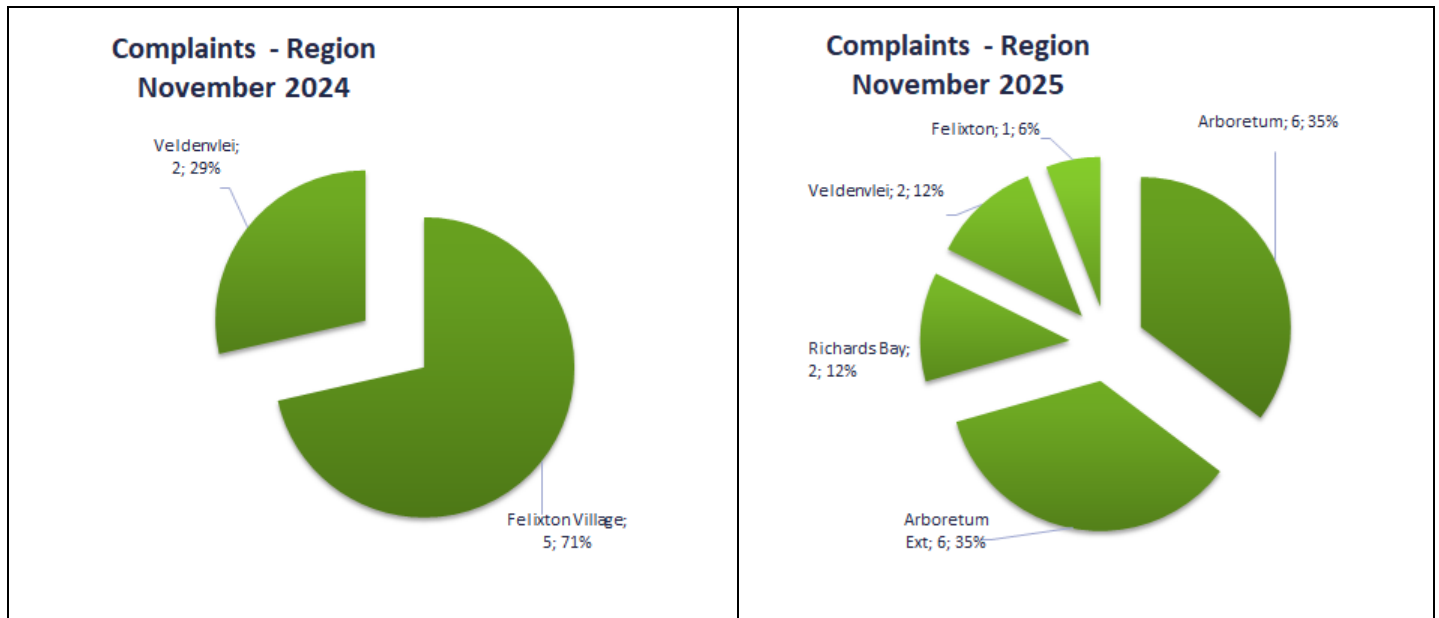


Figure 3.3: Complaints - region.

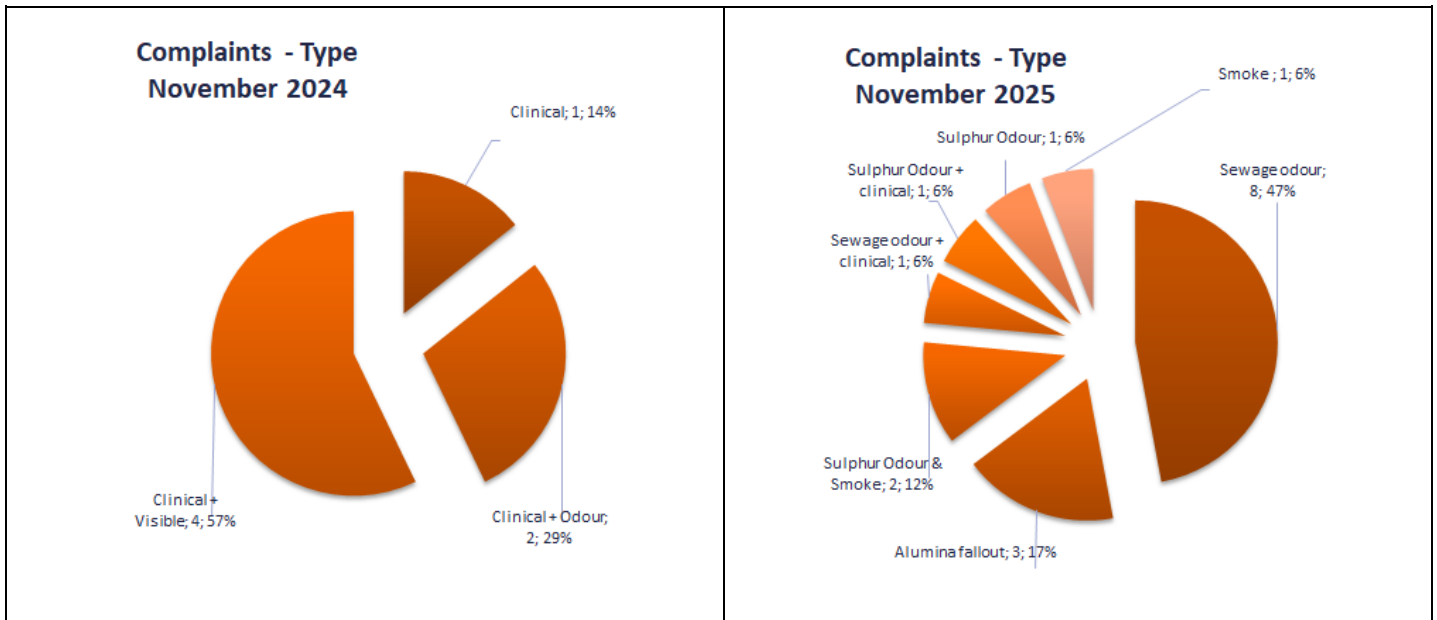


Figure 3.4: Complaints - type.

The complaints received were allocated as follows: CoU (9, 52.9%), Grindrod (4, 23.5%), South32 (3, 17.6%), and THS (1, 5.9%).

Table 3.1: Complaint - allocation, region, and type.

Complaint - allocation, region, and type		17
<b>CoU</b>		<b>9</b>
Arboretum	Sewage odour	4
Arboretum Ext	Sewage odour	4
	Sewage odour + clinical	1
<b>Grindrod</b>		<b>4</b>
Arboretum	Sulphur Odour	2
	Sulphur Odour + clinical	1
Richards Bay	Sulphur Odour & Smoke	2
<b>South32</b>		<b>3</b>
Arboretum Ext	Alumina fallout	1
Veldenvlei	Alumina fallout	2
<b>THS</b>		<b>1</b>
Felixton	Smoke	1

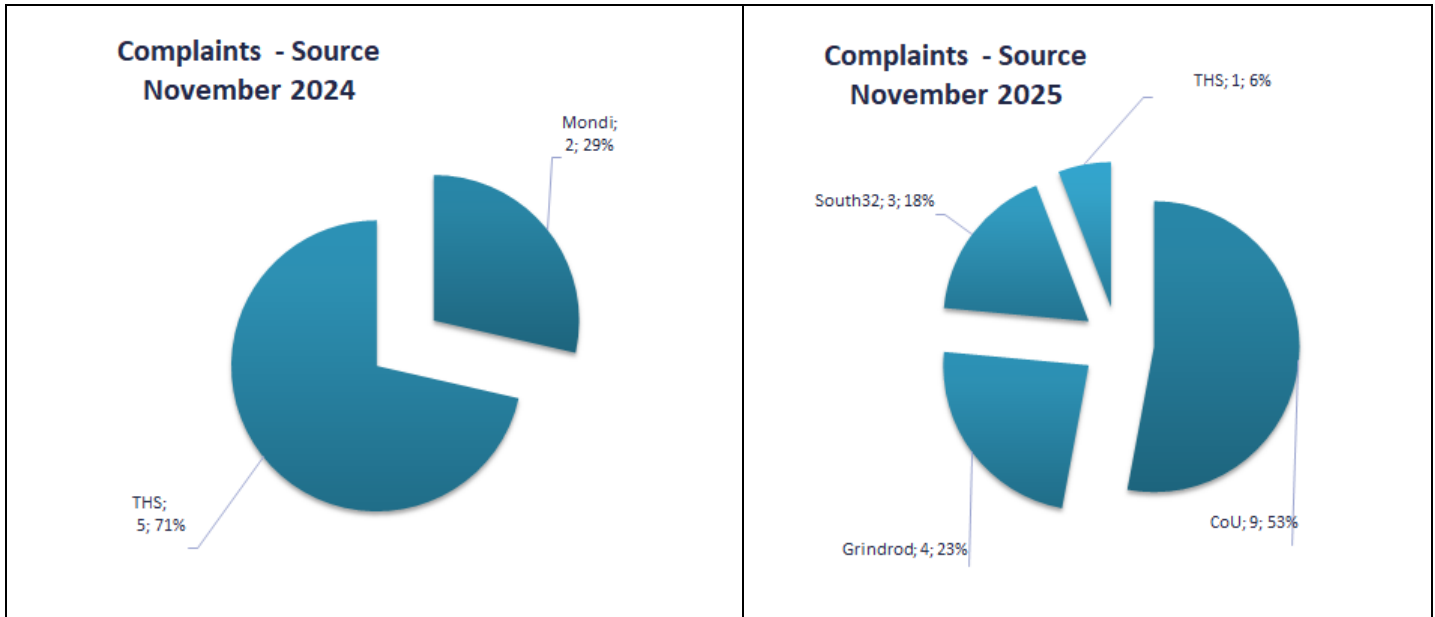


Figure 3.5: Complaints - source.

#### 4. FINE PARTICULATE MONITORING

Particulate Matter (PM) refers to the solid particles and liquid droplets in the atmosphere. Many anthropogenic and natural sources emit PM directly or release other pollutants into the atmosphere, which then form PM. These solid and liquid particles can vary in size. For example, particles less than 10 micrometres (µm) in diameter are classified as PM<sub>10</sub>, and particles less than 2.5 micrometres (µm) in diameter are classified as PM<sub>2.5</sub>.

Fine particulates can be inhaled and accumulate in the deep recesses of the respiratory system. Therefore, exposure to sustained high concentrations may result in the following:

- ▶ Reduced lung development in children
- ▶ Allergy-related inflammatory reactions of the airway
- ▶ Asthma, nasal congestion, and sinus problems
- ▶ Increase in symptoms associated with the lower respiratory tract.
- ▶ In severe cases, a reduction in life expectancy

Particulate matter (PM) monitoring at eSikhaleni and Richardia uses Tapered Element Oscillating Microbalance (TEOM) devices, which are U.S. EPA-approved for continuous PM measurement. These instruments determine particle mass by detecting frequency changes in a vibrating element as particles accumulate on it. In contrast, Brackenham, CBD, Felixton, Scorpio, and Harbour West employ E-Samplers, which combine real-time light scattering with filter-based sampling to measure particulate concentrations. The E-Sampler is certified under the UK's Monitoring Certification Scheme (MCERTS) for indicative ambient particulate monitoring.

## 4.1. Ambient Air Quality Standards

Ambient air quality standards for particulates are listed below (Table 4.1).

Table 4.1: Particulate ambient air quality limits.

Organisation	Limit	PM <sub>10</sub> Daily Average (µg/m <sup>3</sup> )	PM <sub>10</sub> Annual Average (µg/m <sup>3</sup> )	PM <sub>2.5</sub> Daily Average (µg/m <sup>3</sup> )	PM <sub>2.5</sub> Annual Average (µg/m <sup>3</sup> )
RSA [a, d]	Standard	75 [b]	40 [c]	40 [b]	20 [c]
WHO [e]	Guideline	45 [c]	15 [c]	15 [c]	5 [c]

**Notes:**

- Government Gazette 32816 (24 December 2009) in terms of the National Environmental Management: Air Quality Act No. 39 of 2004, effective from 2015 (RSA-NEMAQA, 2009).
- Not to be exceeded more than four (4) times in one year.
- Not to be exceeded.
- Government Gazette 35463 (29 June 2009) in terms of the National Environmental Management: Air Quality Act No. 39 of 2004, effective from 2015 (RSA-NEMAQA, 2012).
- World Health Organisation (WHO, 2021).

## 4.2. Data Availability

The percentage of valid data received from the PM analysers for November 2025 is shown in Table 4.2.

Table 4.2: PM data capture.

Station	Availability (%)	PM <sub>10</sub> (%)	PM <sub>2.5</sub> (%)
Brackenham ES2	100	-	100
CBD ES1	100	100	-
eSikhaleni	99	99	-
Felixton ES1	100	100	-
Felixton ES2	99	-	99
Harbour West ES2	100	-	100
Richardia	100	100	-
Scorpio ES1	98	98	-
Scorpio ES2	98	-	98

**Missing Data (PM<sub>10</sub>):**

- eSk - Power outage, data invalidation (1 day/s with <80% data capture, 13 November 2025).
- Scr - Power outage, data invalidation (1 day/s with <80% data capture, 5 November 2025).

**Missing Data (PM<sub>2.5</sub>):**

- Scr - Power outage, data invalidation (1 day/s with <80% data capture, 5 November 2025).

### 4.3. Monthly

PM<sub>10</sub> monthly average concentrations did not exceed the RSA Annual Limit; the WHO Annual Limit was exceeded at CBD, eSikhaleni, Richardia and Scorpio – all points monitored (Figure 4.1). Comparisons to previous months are also provided (Figure 4.2).

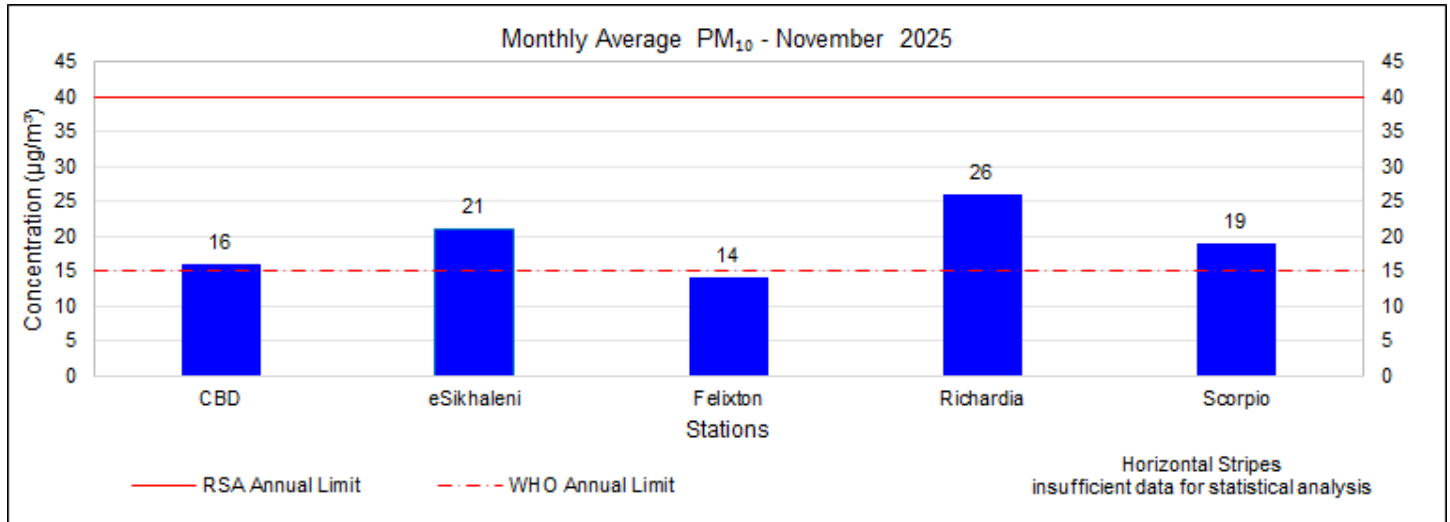


Figure 4.1: PM<sub>10</sub> monthly concentrations.

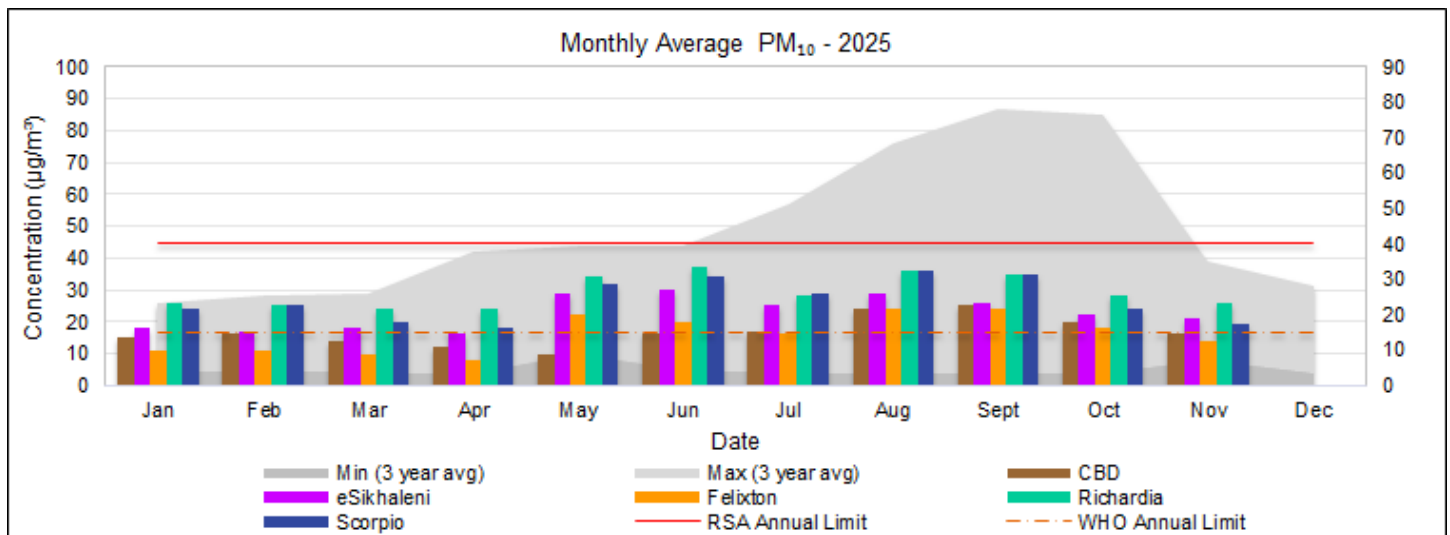


Figure 4.2: PM<sub>10</sub> monthly comparison.

PM<sub>2.5</sub> monthly average concentrations exceeded the RSA Annual Limit at Brackenheim, Felixton and Scorpio. The WHO Annual Limit was exceeded at Brackenheim, Felixton, Harbour West and Scorpio - all points monitored (Figure 4.3). Comparisons to previous months are also provided (Figure 4.4).

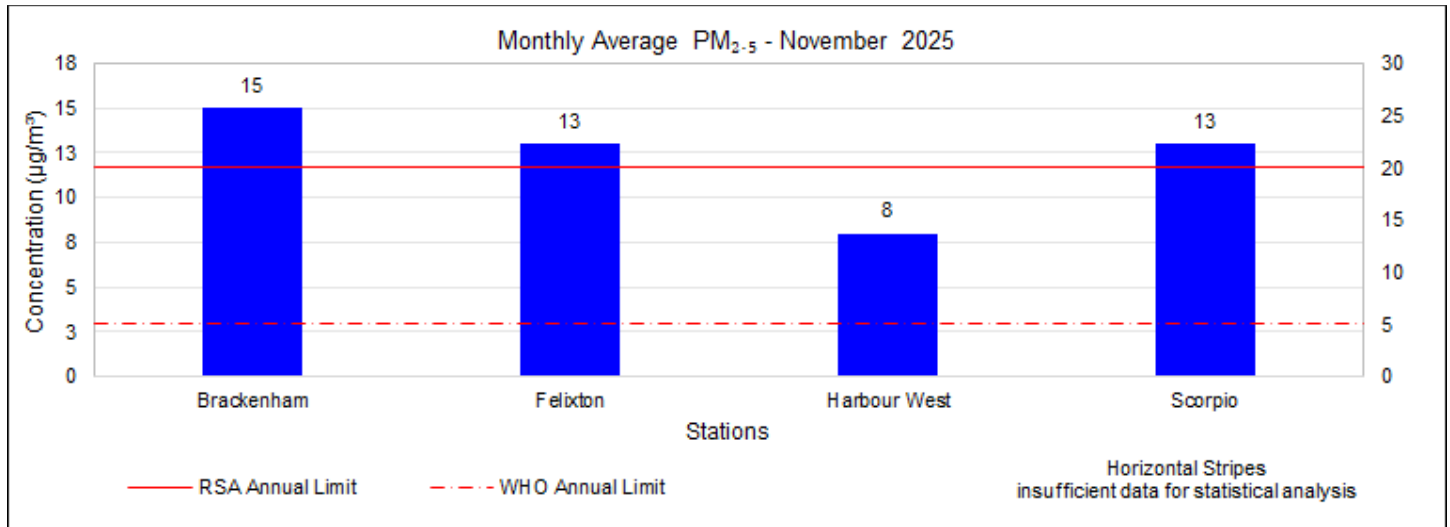


Figure 4.3: PM<sub>2.5</sub> monthly concentrations.

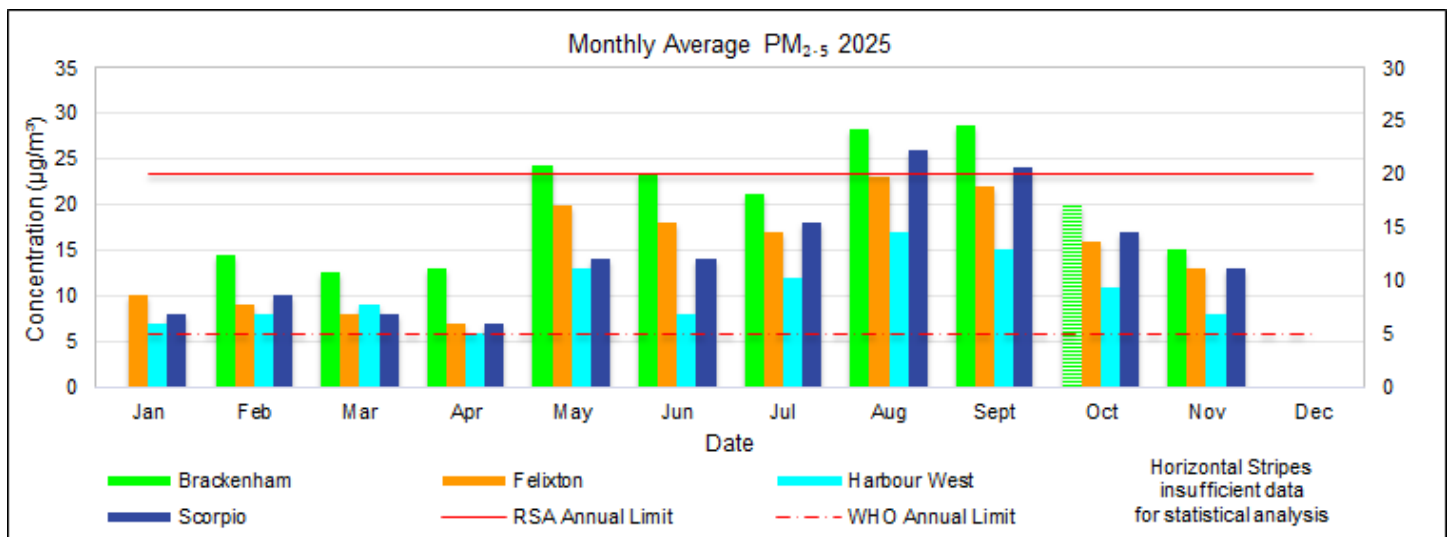


Figure 4.4: PM<sub>2.5</sub> monthly comparison.

### 4.4. Diurnal

PM diurnal concentrations are shown below (Figure 4.5 and Figure 4.6). Diurnal concentrations of PM<sub>10</sub> did not exceed the RSA Daily Limit (75 µg/m<sup>3</sup>) or the WHO Daily Limit (45 µg/m<sup>3</sup>).

Diurnal concentrations of PM<sub>2.5</sub> did not exceed the RSA Daily Limit (40 µg/m<sup>3</sup>); the WHO Daily Limit (15 µg/m<sup>3</sup>) was exceeded at Brackenham, Felixton and Scorpio.

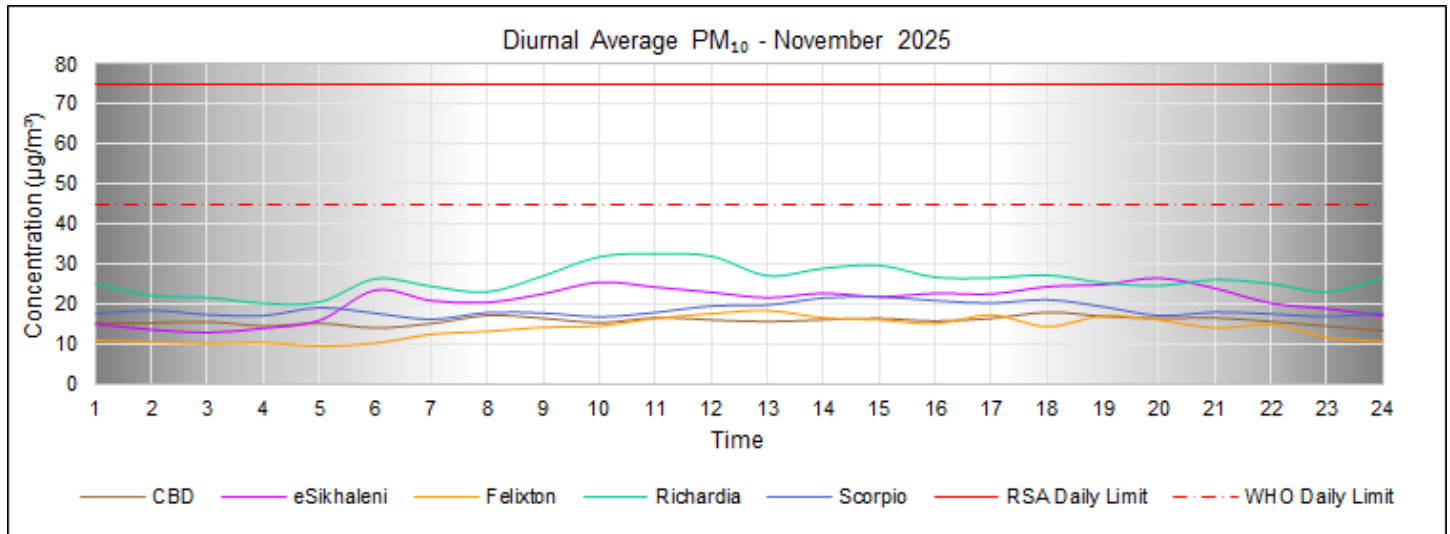


Figure 4.5: PM<sub>10</sub> diurnal concentrations.

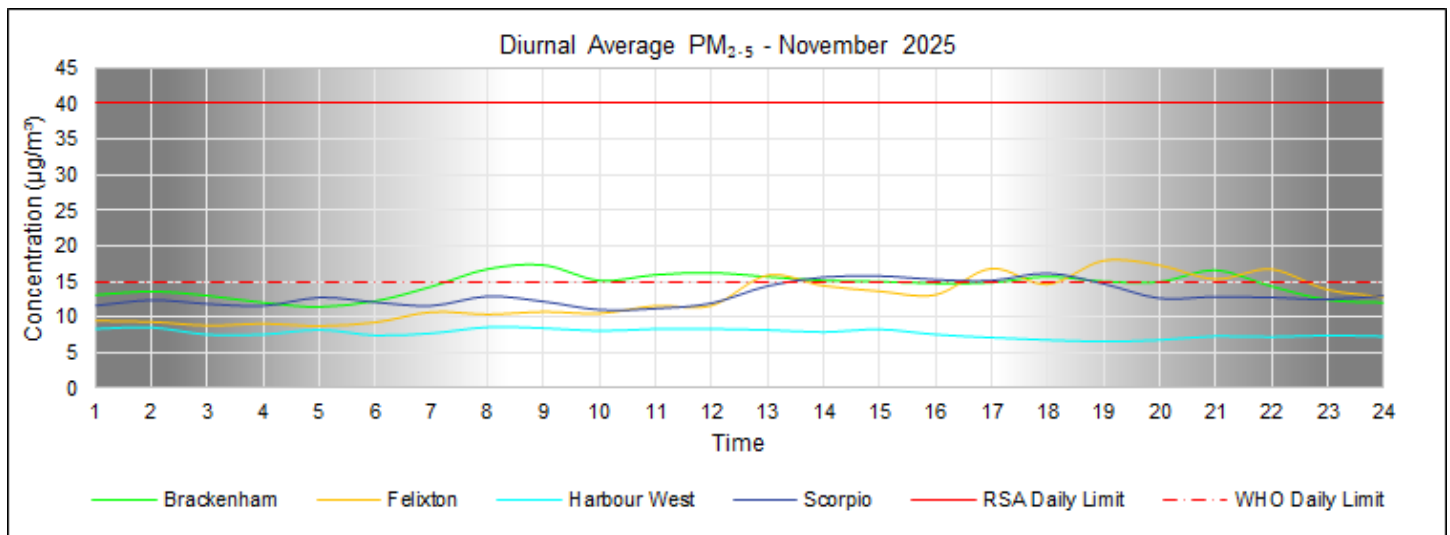


Figure 4.6: PM<sub>2.5</sub> diurnal concentrations.

### 4.5. Daily

PM<sub>10</sub> daily concentrations are shown in Figure 4.7, and exceedances are in Table 4.3. There were:

- ▶ No (0) measured exceedances of the RSA Limit (75 µg/m<sup>3</sup>); and,
- ▶ One (1) measured exceedance of the WHO Limit (45 µg/m<sup>3</sup>).

Table 4.3: PM<sub>10</sub> 24-hour exceedances

PM <sub>10</sub> Daily WHO Limit (45 µg/m <sup>3</sup> )	1
No response required	1
Richardia	1
No comment	1

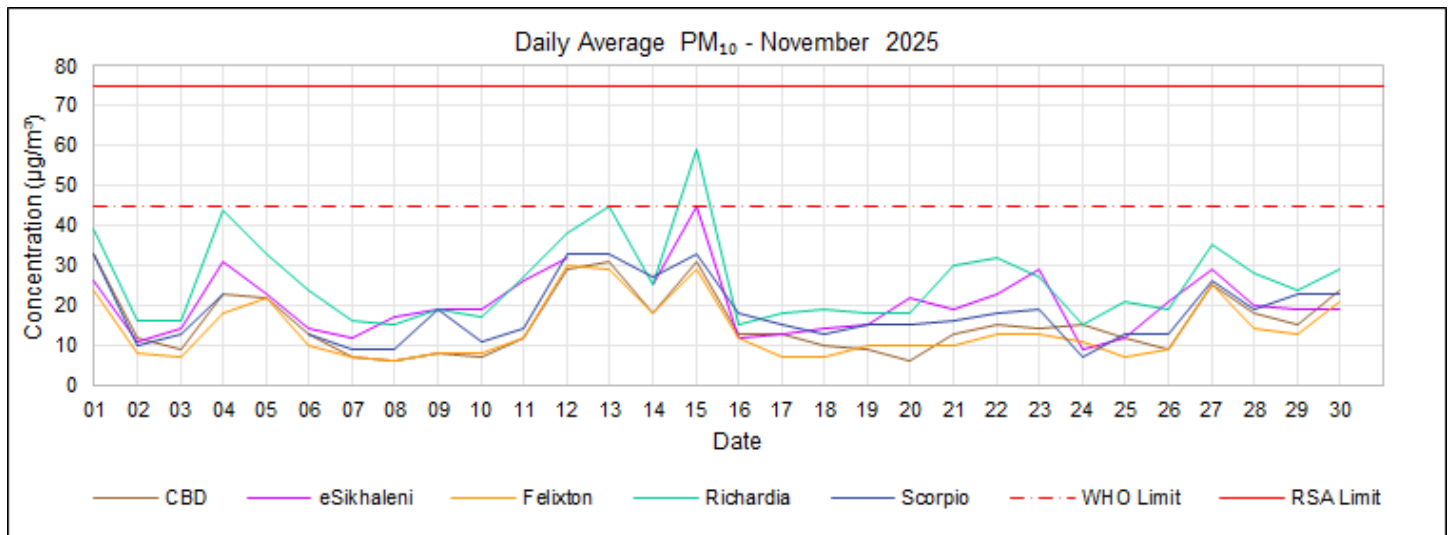


Figure 4.7: PM<sub>10</sub> 24-hour average concentrations.

Missing Data (PM<sub>10</sub>)

- eSk - Power outage, data invalidation (1 day/s with <80% data capture, 13 November 2025).
- Scr - Power outage, data invalidation (1 day/s with <80% data capture, 5 November 2025).

PM<sub>2.5</sub> daily concentrations are shown in Figure 4.8, and exceedances are in Table 4.4. There were:

- ▶ No (0) measured exceedances of the RSA Limit (40 µg/m<sup>3</sup>); and,
- ▶ Twenty-eight (28) measured exceedances of the WHO Limit (15 µg/m<sup>3</sup>).

Table 4.4: PM<sub>2.5</sub> 24-hour exceedances (WHO).

PM <sub>2.5</sub> Daily WHO Limit (15 µg/m <sup>3</sup> )	28
<b>No response required</b>	<b>28</b>
Brackenham	10
No comment	10
Felixton	8
No comment	8
Scorpio	9
No comment	9
Harbour West	1
No comment	1

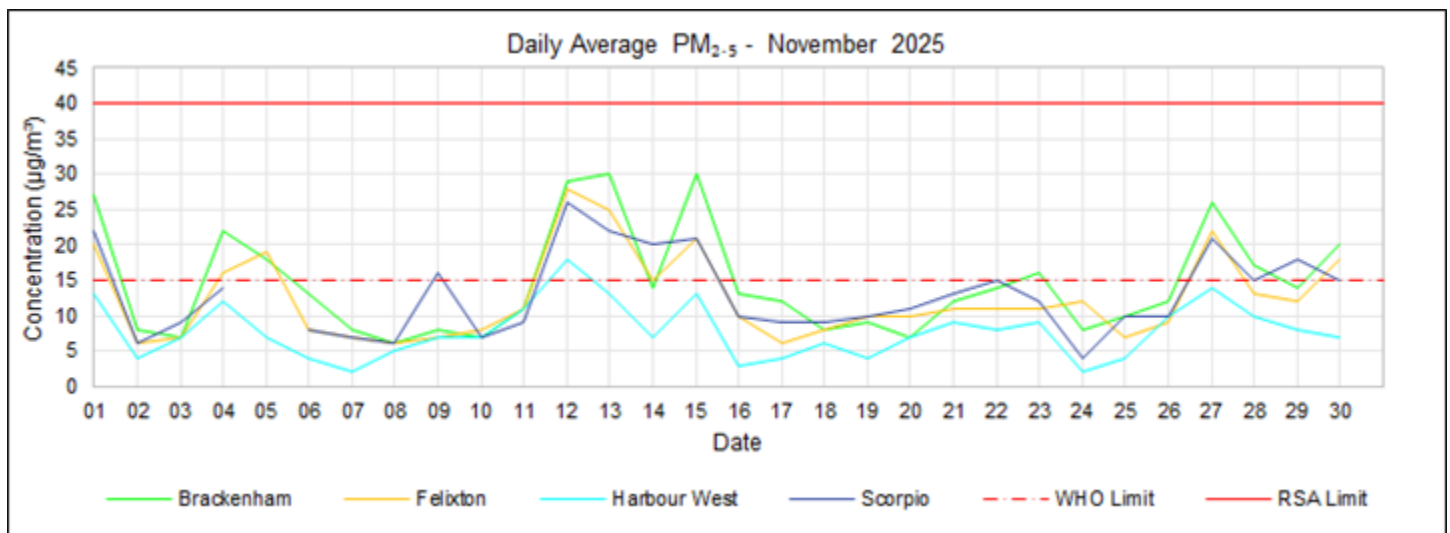


Figure 4.8: PM<sub>2.5</sub> daily average concentrations.

Missing Data (PM<sub>2.5</sub>)

- Scr - Power outage, data invalidation (1 day/s with <80% data capture, 5 November 2025).

### 4.6. Exceedances

The number of days on which exceedances occurred, plus comparisons to previous months, is shown in Figure 4.9 and Figure 4.10, and a summary of PM exceedances broken down per station is presented in Table 4.5 and Table 4.6. According to the relevant Air Quality Index (AQI), the areas where no exceedances were measured may be considered good air quality concerning PM.

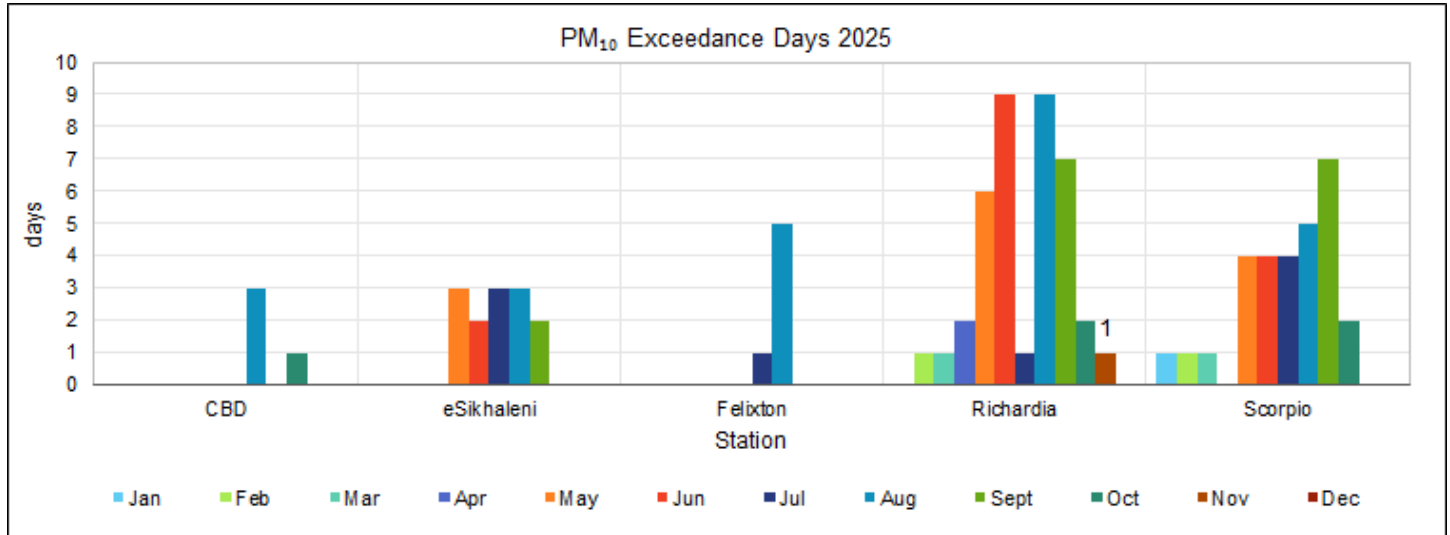


Figure 4.9: PM<sub>10</sub> exceedance days.

Table 4.5: PM<sub>10</sub> exceedance summary.

2025	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>PM<sub>10</sub> Daily RSA Limit (75 µg/m³)</b>													
Brackenham	-	-	-	-	-	-	-	-	-	-	-	-	0
CBD	-	-	-	-	-	-	-	-	-	-	-	-	0
eSikhaleni	-	-	-	-	-	-	-	-	-	-	-	-	0
Felixton	-	-	-	-	-	-	-	-	-	-	-	-	0
Richardia	-	-	-	-	-	1	-	-	1	-	-	-	2
Scorpio	-	-	-	-	-	-	-	1	1	-	-	-	2
<b>PM<sub>10</sub> Daily WHO Limit (45 µg/m³)</b>													
Brackenham	-	-	-	-	-	-	-	-	-	-	-	-	0
CBD	1	-	-	-	-	-	-	3	-	1	-	-	5
eSikhaleni	-	-	-	-	3	2	3	3	2	-	-	-	13
Felixton	-	-	-	-	-	-	1	5	-	-	-	-	6
Richardia	-	1	1	2	6	9	1	9	7	2	1	-	39
Scorpio	1	1	1	-	4	5	4	5	7	2	-	-	30

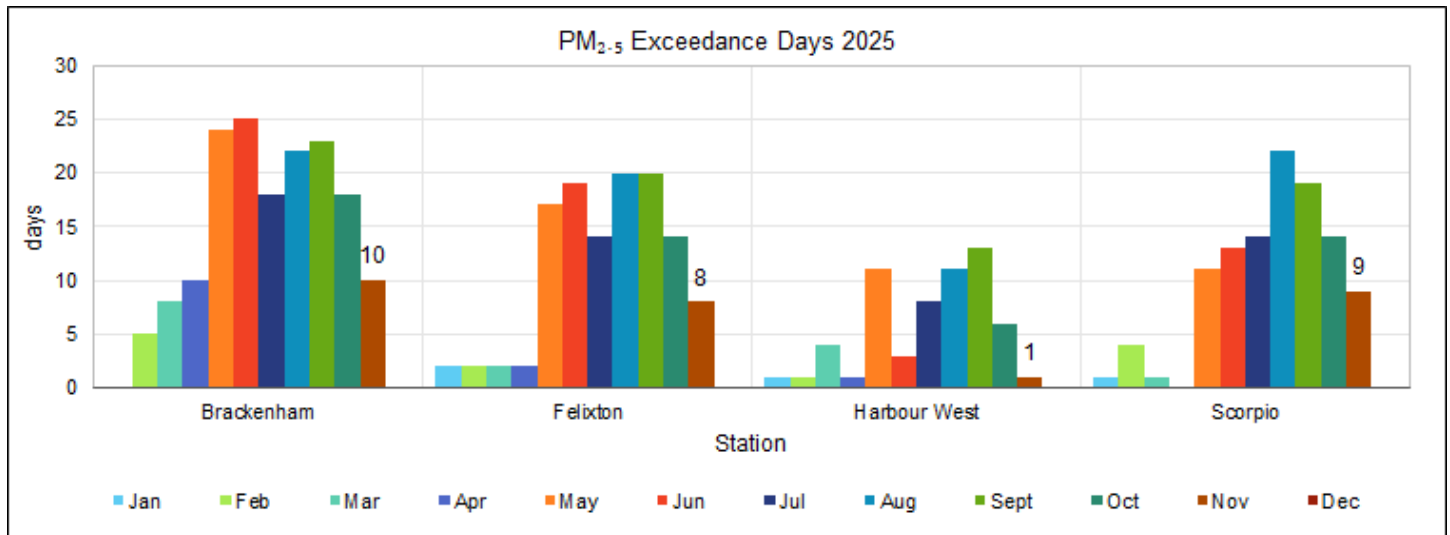


Figure 4.10: PM<sub>2.5</sub> exceedance days.

Table 4.6: PM<sub>2.5</sub> exceedance summary.

2025	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>PM<sub>2.5</sub> Daily RSA Limit (40 µg/m<sup>3</sup>)</b>													
Brackenham	-	-	-	-	2	-	3	5	6	2	-	-	18
Felixton	-	-	-	-	-	-	1	5	-	-	-	-	6
Harbour West	-	-	-	-	-	-	-	3	-	-	-	-	3
Scorpio	-	-	-	-	-	-	1	5	2	-	-	-	8
<b>PM<sub>2.5</sub> Daily WHO Limit (15 µg/m<sup>3</sup>)</b>													
Brackenham	-	6	8	10	25	25	18	22	23	18	-	-	155
Felixton	2	3	2	2	18	19	14	20	20	14	8	-	122
Harbour West	1	2	4	1	11	3	8	11	13	6	1	-	61
Scorpio	1	4	1	-	11	14	14	22	19	14	9	-	109

Three (3) stations, Brackenham, Felixton and Scorpio do not comply with the PM<sub>2.5</sub> RSA Daily Standard. The standard allows for a maximum of 4 exceedances of the PM<sub>2.5</sub> Daily WHO Limit Value (40 µg/m<sup>3</sup>).

## 5. SULPHUR DIOXIDE MONITORING

Sulphur dioxide (SO<sub>2</sub>) is one of the highly reactive gases known as "oxides of sulphur." Anthropogenic sources include fossil fuel combustion (particularly coal-burning power plants), industrial processes such as wood pulping, paper manufacturing, petroleum and metal refining, and metal smelting (particularly from sulphide-containing ores, e.g., lead, silver, and zinc ores), as well as vehicle tailpipe emissions. Natural sources of SO<sub>2</sub> emissions include geothermal activity (including hot springs and volcanic activity) and the natural decay of vegetation on land, in wetlands, and oceans.

SO<sub>2</sub> is linked with several adverse effects on the respiratory system as it is highly soluble and thus readily absorbed by the mucous membranes of the nose and upper respiratory tract. Exposure to high concentrations may result in the following:

- ▶ Reduction in lung function (especially in asthmatics and children)
- ▶ Wheezing and coughing
- ▶ In severe cases, a decrease in life expectancy

### 5.1. Ambient Air Quality Standards

South African ambient air quality standards for SO<sub>2</sub> are listed below (Table 5.1).

Table 5.1: SO<sub>2</sub> ambient air quality limits.

Organisation	Limit	10-min Average	Hourly Average	Daily Average	Annual Average
RSA [a]	SO <sub>2</sub> Standard	500 µg/m <sup>3</sup> [b]	350 µg/m <sup>3</sup> [c]	125 µg/m <sup>3</sup> [d]	50 µg/m <sup>3</sup> [e]
		191ppb [b]	134 ppb [c]	48 ppb [d]	19 ppb [e]
WHO [f]	SO <sub>2</sub> Guideline	500 µg/m <sup>3</sup>	-	40 µg/m <sup>3</sup>	-
		191ppb	-	15 ppb	-

**Notes:**

- a) SA Government Gazette 32816 (published 24 December 2009) in terms of the National Environmental Management: Air Quality Act 39 of 2004 (RSA-NEMAQA, 2009)
- b) Not to be exceeded more than five hundred and twenty-six (526) times in one year.
- c) Not to be exceeded more than eighty-eight (88) times in one year
- d) Not to be exceeded more than four (4) times in one year
- e) Not to be exceeded
- f) World Health Organisation (WHO, 2021)

### 5.2. Data Availability

The percentage of valid data received from the SO<sub>2</sub> analysers for November 2025 is shown in Table 5.2.

Table 5.2: SO<sub>2</sub> data capture.

Station	Availability (%)	SO <sub>2</sub> (%)
Arboretum	100	99
Brackenham	100	100
CBD	99	99
eSikhaleni	99	99
Felixton	100	100
Harbour West	100	100
Richardia	100	99
Scorpio	98	98

Notes:

- Red - Not acceptable for statistical purposes (<80%)
- Orange – Does not meet SANAS data capture requirements (<90%)
- Yellow – RBCAA reporting requirement (<=95%)

Missing Data (SO<sub>2</sub>):

- eSk - Power outage, data invalidation (1 day/s with <80% data capture, 13 November 2025).
- Scr - Power outage, data invalidation (1 day/s with <80% data capture, 5 November 2025).

### 5.3. Monthly

Monthly average SO<sub>2</sub> concentrations did not exceed the RSA Annual Limit (Figure 5.1). Comparisons to previous months are also provided (Figure 5.2).

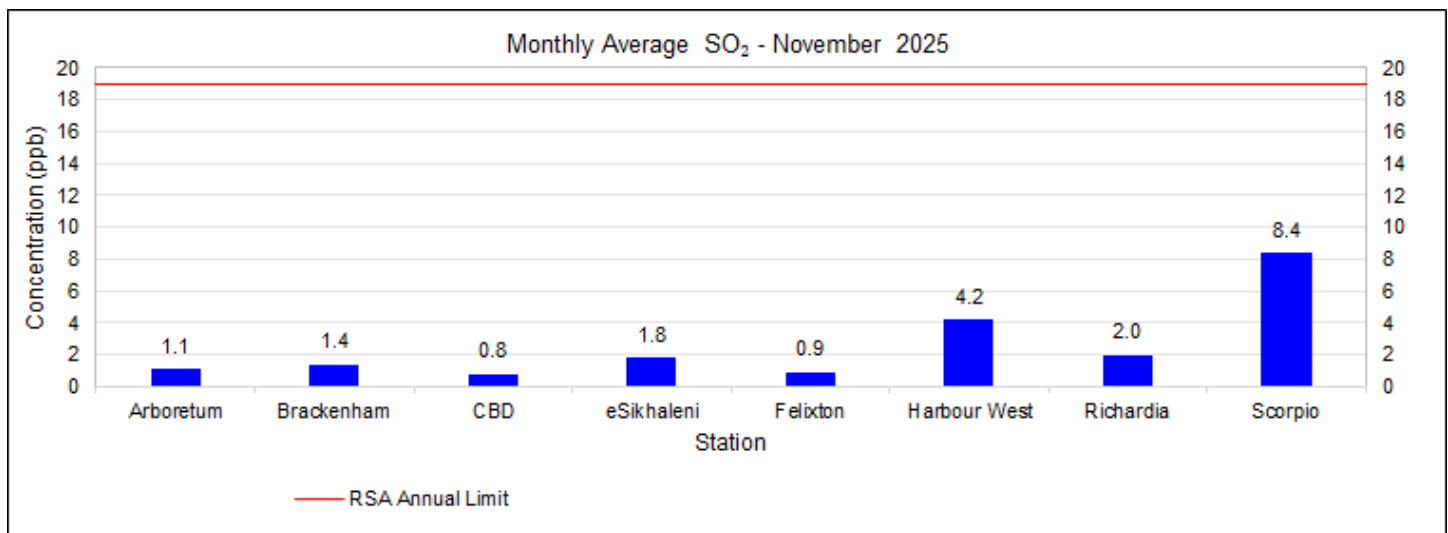


Figure 5.1: SO<sub>2</sub> monthly concentrations.

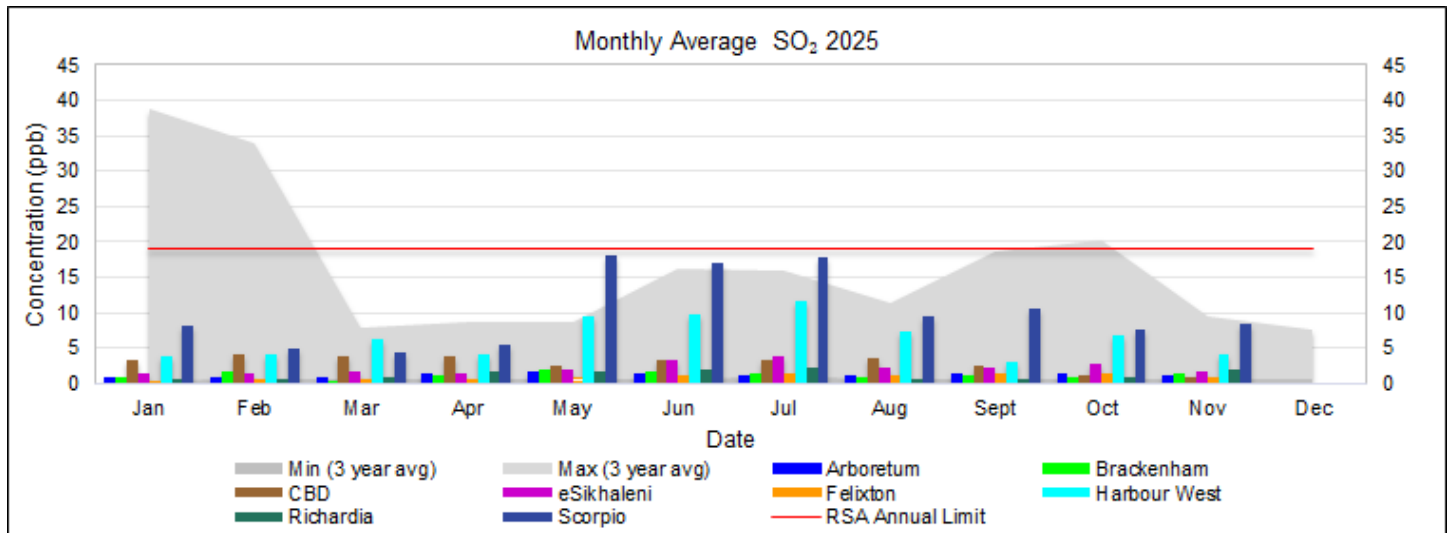


Figure 5.2: SO<sub>2</sub> monthly comparison.

### 5.4. Diurnal

Diurnal SO<sub>2</sub> concentrations are shown below (Figure 5.3). Diurnal concentrations of SO<sub>2</sub> did not exceed the RSA Daily Limit (48 ppb); the WHO Daily Limit (15 ppb) was exceeded at Scorpio and Richardia.

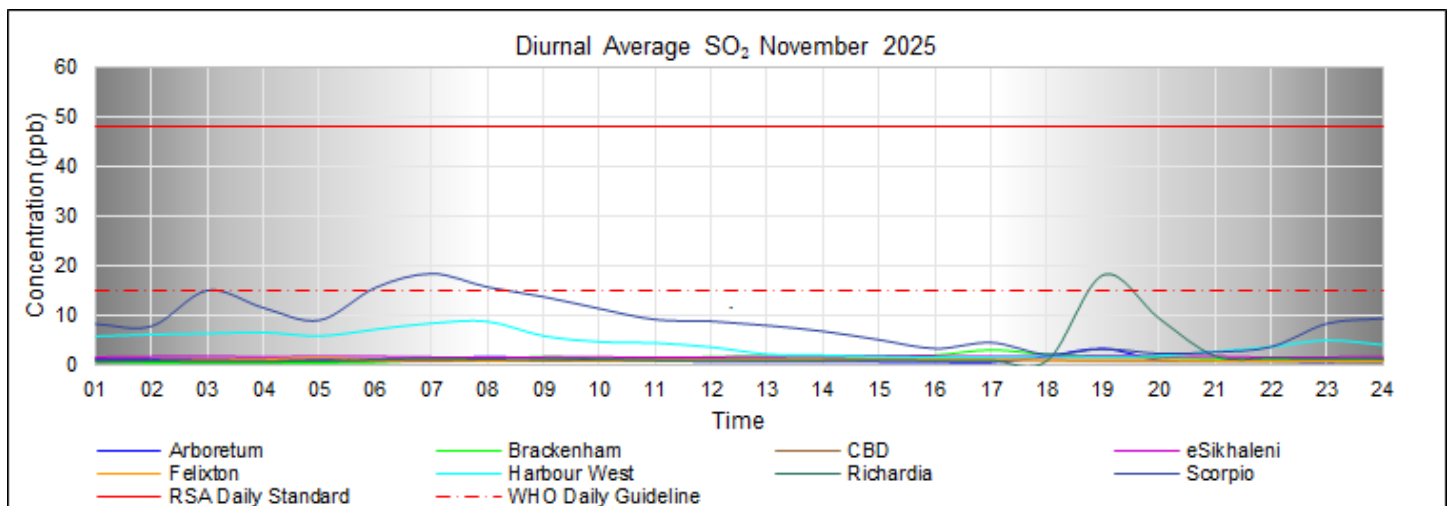


Figure 5.3: SO<sub>2</sub> diurnal concentrations.

### 5.5. Daily

SO<sub>2</sub> daily average concentrations are shown in Figure 5.4 and exceedances in Table 5.3: There were:

- ▶ No (0) measured exceedance of the RSA Limit (48 ppb); and,
- ▶ Eight (8) measured exceedances of the WHO Limit (15 ppb).

Table 5.3: SO<sub>2</sub> 24-hour average exceedances.

<b>SO<sub>2</sub> Daily WHO Limit (15 ppb)</b>	<b>8</b>
<b>No response required</b>	<b>7</b>
Harbour West	1
No comment	1
Scorpio	6
No comment	6
<b>Grindrod</b>	<b>1</b>
Richardia	1
Fire at Sulphur store - Incident report pending	1

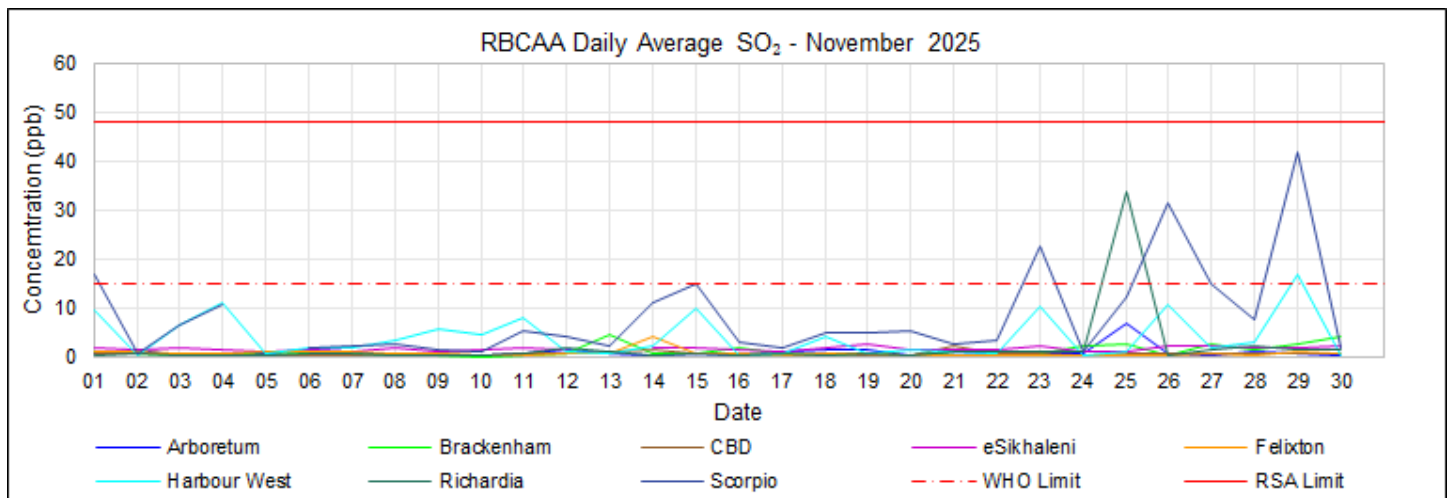


Figure 5.4: SO<sub>2</sub> 24-hour average concentrations.

**Missing Data (SO<sub>2</sub>):**

- eSk - Power outage, data invalidation (1 day/s with <80% data capture, 13 November 2025).
- Scr - Power outage, data invalidation (1 day/s with <80% data capture, 5 November 2025).

### 5.6. Hourly

SO<sub>2</sub> hourly average concentrations are shown in Figure 5.5. Six (6) measured exceedances of the RSA Limit (134 ppb) were recorded.

Table 5.4: SO<sub>2</sub> 1-hour average exceedances.

SO <sub>2</sub> Hourly RSA Limit (134 ppb)		6
<b>Foskor</b>		<b>3</b>
Scorpio		3
RBCAA allocation		3
<b>South32</b>		<b>1</b>
Scorpio		1
RBCAA allocation		1
<b>Grindrod</b>		<b>2</b>
Richardia		2
Fire at Sulphur store - Incident Report pending		2

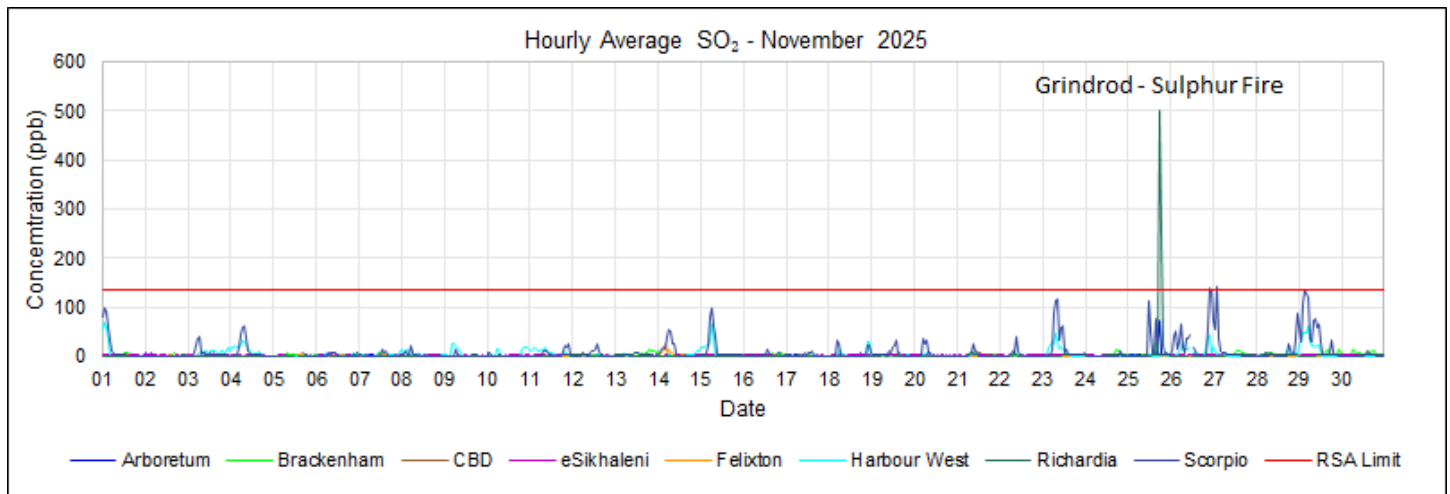


Figure 5.5: SO<sub>2</sub> 1-hour average concentrations.

### 5.7. 10-minute

SO<sub>2</sub> 10-minute average concentrations are shown in Figure 5.6. There were thirteen (13) measured exceedances of the RSA and WHO Limit (191 ppb).

Table 5.5: SO<sub>2</sub> 10-minute average exceedances.

SO <sub>2</sub> 10-minute RSA & WHO Limit (191 ppb)	13
<b>Foskor</b>	<b>1</b>
Scorpio	1
RBCAA allocation	1
<b>Grindrod</b>	<b>12</b>
Arboretum	1
Fire at Sulphur store - Incident Report pending	1
Richardia	8
Fire at Sulphur store - Incident Report pending	8
Scorpio	3
Fire at Sulphur store - Incident Report pending	3

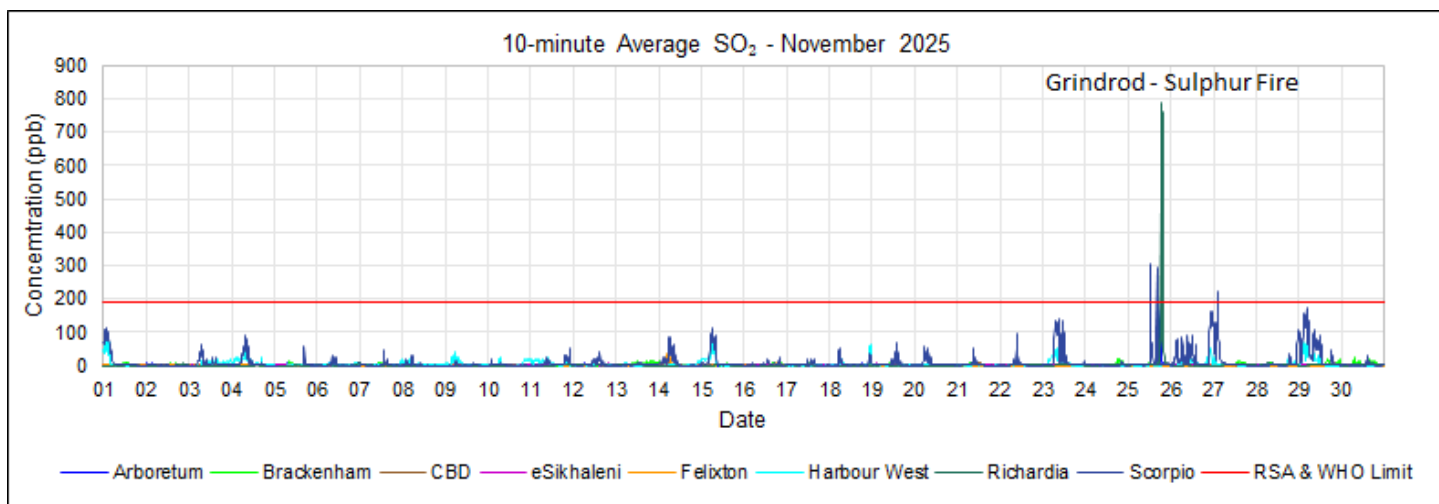


Figure 5.6: SO<sub>2</sub> 10-minute average concentrations.

### 5.8. Exceedances

The number of days on which exceedances occurred, plus comparisons to previous months, is shown in Figure 5.7, and a summary of the SO<sub>2</sub> exceedances broken down per station is presented in Table 5.6. SO<sub>2</sub> exceedances can be associated with emissions resulting from process upsets (e.g., planned maintenance, plant shutdowns, or start-ups), leaks in equipment, pipelines, seals, and valves (fugitive emissions), or an event (e.g., fires or emergency shutdowns). According to the relevant Air Quality Index (AQI), the areas where no exceedances were measured may be considered to have good air quality regarding SO<sub>2</sub>.

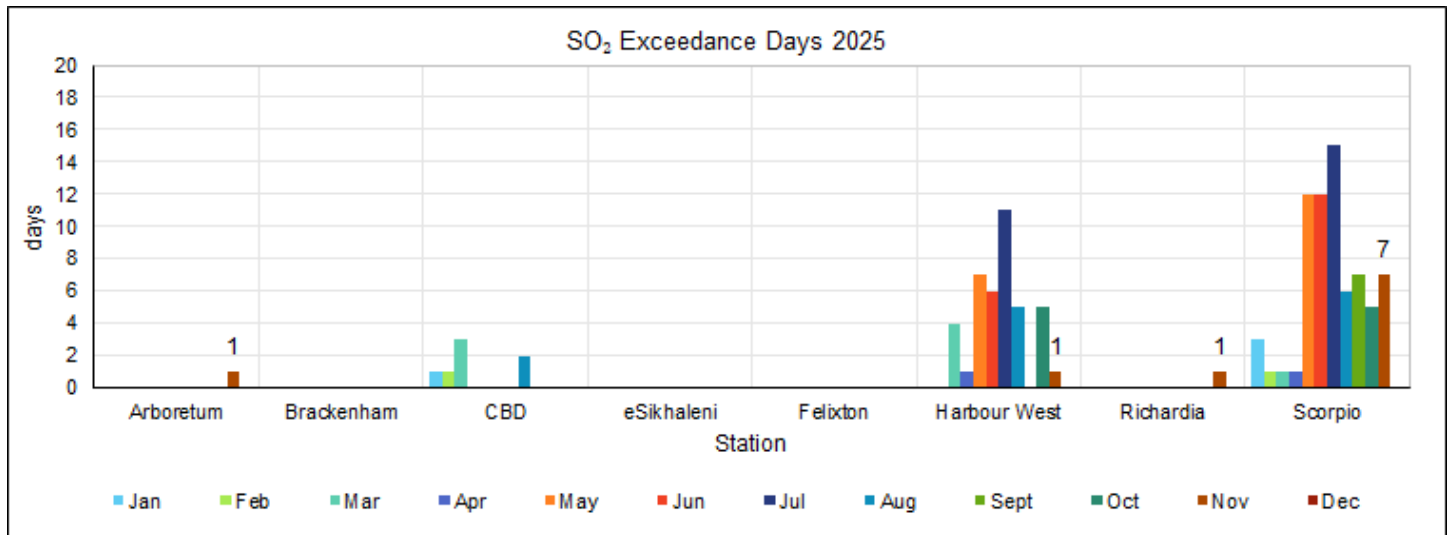


Figure 5.7: SO<sub>2</sub> exceedance days.

Table 5.6: SO<sub>2</sub> exceedance summary.

2025	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>SO<sub>2</sub> Daily RSA Limit (48 ppb)</b>													
CBD	-	-	-	-	-	-	-	-	-	-	-	-	0
eSikhaleni	-	-	-	-	-	-	-	-	-	-	-	-	0
Harbour West	-	-	-	-	-	-	-	-	-	-	-	-	0
Richardia	-	-	-	-	-	-	-	-	-	-	-	-	0
Scorpio	1	-	-	-	2	2	1	-	1	1	-	-	8
<b>SO<sub>2</sub> Daily WHO Limit (15 ppb)</b>													
CBD	1	1	3	-	-	-	-	2	-	-	-	-	7
eSikhaleni	-	-	-	-	-	-	-	-	-	-	-	-	0
Harbour West	-	-	4	1	7	6	11	5	-	5	1	-	40
Richardia	-	-	-	-	-	-	-	-	-	-	1	-	1
Scorpio	3	-	1	1	12	11	15	6	7	5	6	-	67
<b>SO<sub>2</sub> Hourly RSA Limit (134 ppb)</b>													
CBD	-	-	-	-	-	-	-	-	-	-	-	-	0
eSikhaleni	-	-	-	-	-	-	-	-	-	-	-	-	0
Harbour West	1	-	-	-	-	-	-	-	-	-	-	-	1
Richardia	-	-	-	-	-	-	-	-	-	-	-	-	0
Scorpio	4	-	3	-	1	-	2	2	-	-	-	-	12
<b>SO<sub>2</sub> 10-minute RSA &amp; WHO Limit (191 ppb)</b>													
CBD	-	-	-	-	-	-	-	-	-	-	-	-	0
eSikhaleni	-	-	-	-	-	-	-	-	-	-	-	-	0
Harbour West	-	-	-	-	-	-	-	-	-	-	-	-	0
Richardia	-	-	-	-	-	-	-	-	-	-	8	-	8
Scorpio	18	1	-	-	-	3	3	-	-	16	4	-	45

One (1) station, Scorpio, does not comply with the SO<sub>2</sub> RSA Daily Standard. The standard allows for a maximum of 4 exceedances of the SO<sub>2</sub> Daily RSA Limit Value (48 µg/m<sup>3</sup>).

## 6. TOTAL REDUCED SULPHUR MONITORING

Total reduced sulphur compounds (TRS), often associated with rotten egg or cooked cabbage odour, refer to a gaseous mixture of compounds consisting mainly of hydrogen sulphide (H<sub>2</sub>S), methyl mercaptan (CH<sub>3</sub>S-H), dimethyl sulphide (CH<sub>3</sub>-S-CH<sub>3</sub>) and dimethyl disulphide (CH<sub>3</sub>-S-S-CH<sub>3</sub>). While there are other ambient TRS compounds, these four are the most common, abundant, and generally referred to in TRS discussions. Once released into the atmosphere, oxidation products of TRS compounds, such as sulphuric acid, contribute to the environment's acidity. The most often reported health concerns related to TRS substances are nausea and headaches, although each component has its own characteristics and effects.

### 6.1. Ambient Air Quality Standards

There are no South African standards for TRS; however, the World Health Organisation (WHO) and the Ontario Ministry for the Environment (OME) have derived guidelines.

Table 6.1: TRS ambient air quality limits.

Organisation	Limit	10-min Average	30-minute Average	24-hour Average	Annual Average
WHO	Guideline	-	7 µg/m <sup>3</sup> [a]	-	-
		-	5 ppb [a]	-	-
OME	Standard (pulp and paper)	13 µg/m <sup>3</sup> [b]	10 µg/m <sup>3</sup> [b]	14 µg/m <sup>3</sup> [c]	-
		9.3 ppb [b]	7.2 ppb [b]	10.1 ppb [c]	-
OME	Standard (other industries)	13 µg/m <sup>3</sup> [b]	10 µg/m <sup>3</sup> [b]	7 µg/m <sup>3</sup> [b]	-
		9.3 ppb [b]	7.2 ppb [b]	5.0 ppb [b]	-

**Notes:**

- World Health Organisation recommendation to avoid substantial complaints about odour annoyance among the exposed population (WHO, 2000).
- Based on odour effects (OME, 1999).
- Based on the odour and health effects (OME, 1999).
- Based on the adverse effects on the respiratory system (nasal lesions) (OME, 1999).

The RBCAA has decided to implement the following:

- ▶ 30-minute WHO H<sub>2</sub>S Guideline; and the
- ▶ Daily and 10-minute OME standards for the Pulp and Paper sector.

## 6.2. Data Availability

The percentage of valid data received from the TRS analysers for November 2025 is shown in Table 6.2.

Table 6.2: TRS data capture.

Station	Availability (%)	TRS (%)
CBD	99	99
eSikhaleni	99	98
Felixton	100	99
Richardia	100	100

Notes:

- Red - Not acceptable for statistical purposes (<80%)
- Orange – Does not meet SANAS data capture requirements (<90%)
- Yellow – RBCAA reporting requirement (<=95%)

**Missing Data (TRS):**

- eSk - Power outage, data invalidation (1 day/s with <80% data capture, 13 November 2025).

## 6.3. Monthly

Monthly average TRS concentrations are shown in Figure 6.1. Comparisons to previous months are also provided (Figure 6.2).

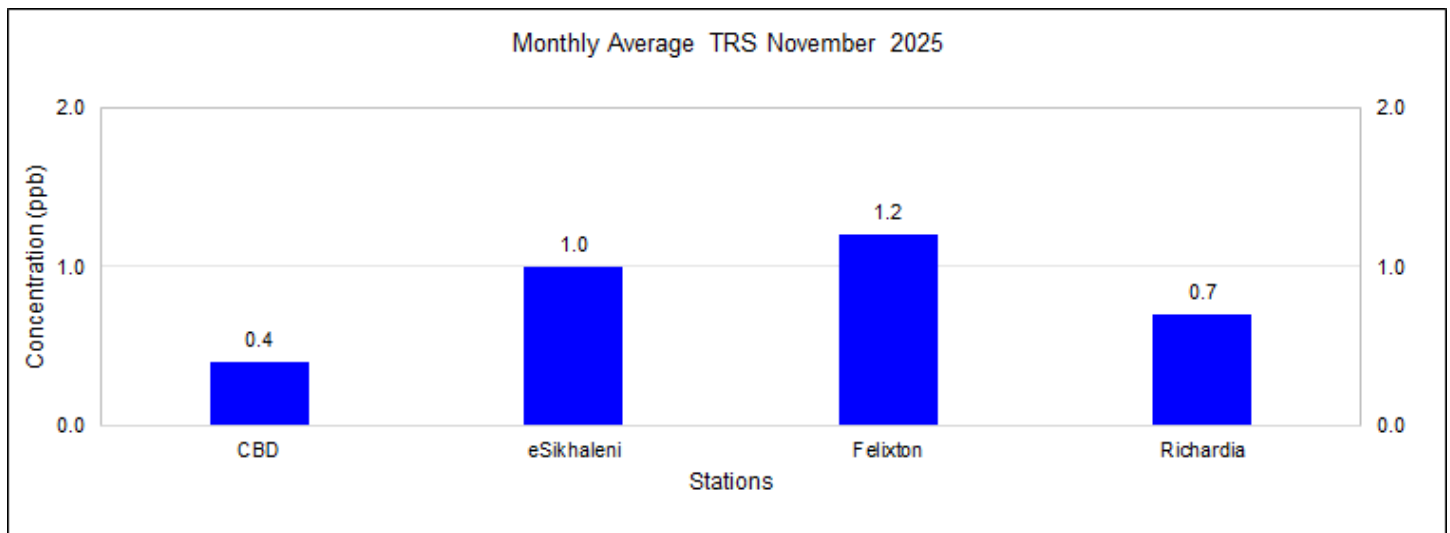


Figure 6.1: TRS monthly concentrations.

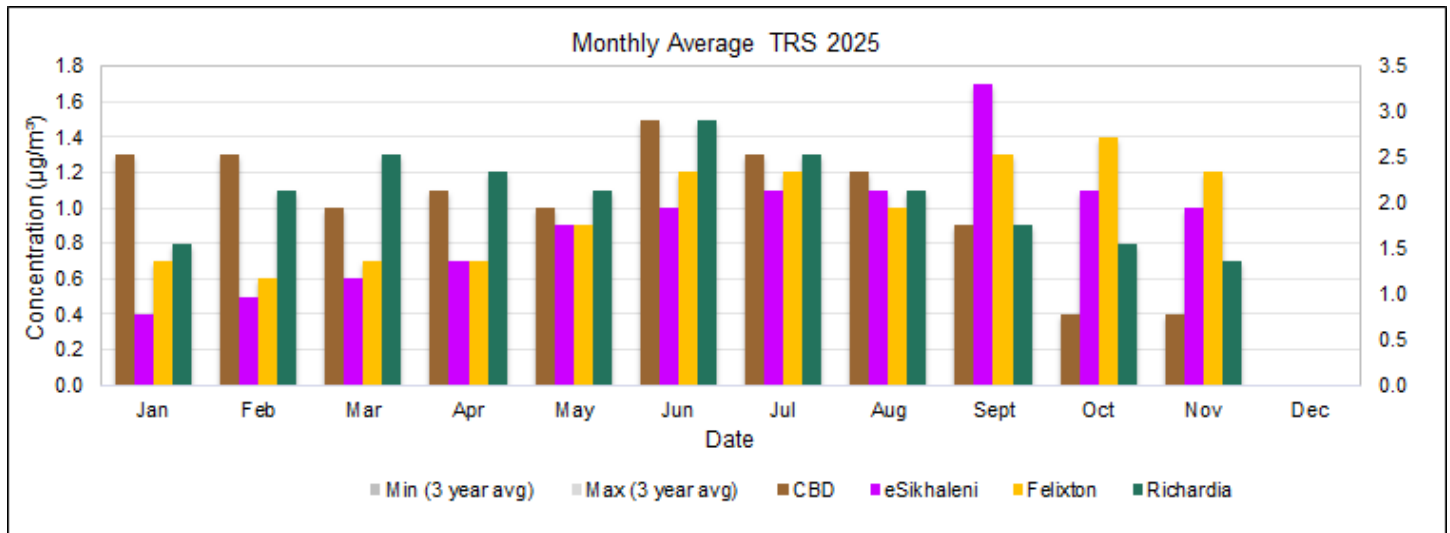


Figure 6.2: TRS monthly comparison.

### 6.4. Diurnal

The diurnal TRS concentrations are shown below (Figure 6.3). Diurnal concentrations of TRS did not exceed the OME Daily Limit (10.1 ppb).

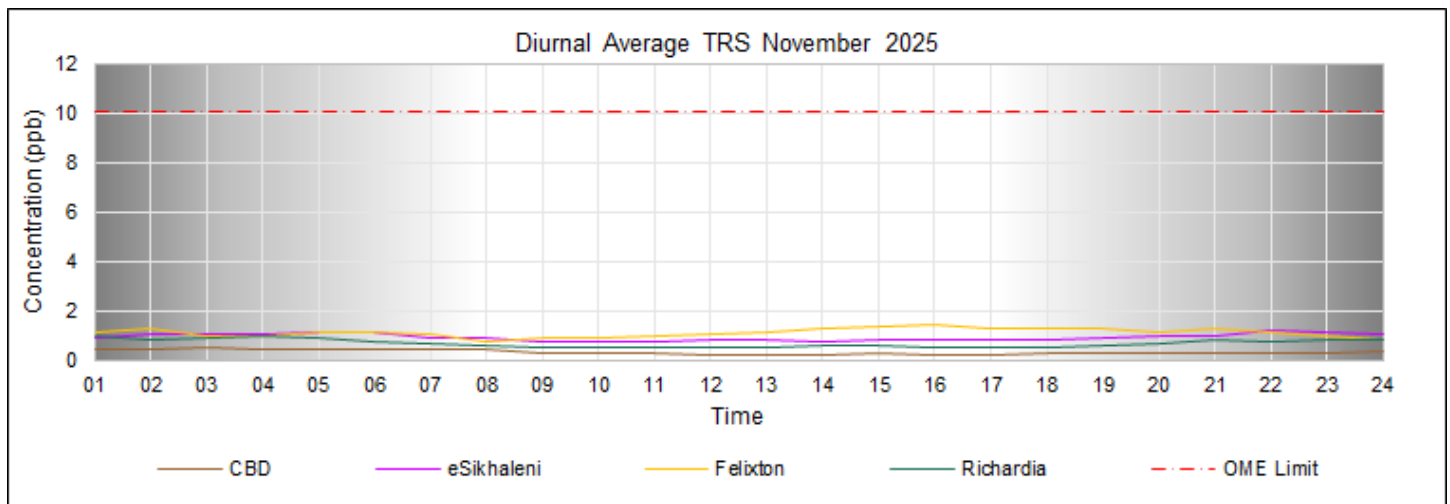


Figure 6.3: TRS diurnal concentrations.

### 6.5. Daily

The daily average concentrations of TRS are shown in Figure 6.4. No (0) exceedances of the OME Limit (10.1 ppb) were measured.

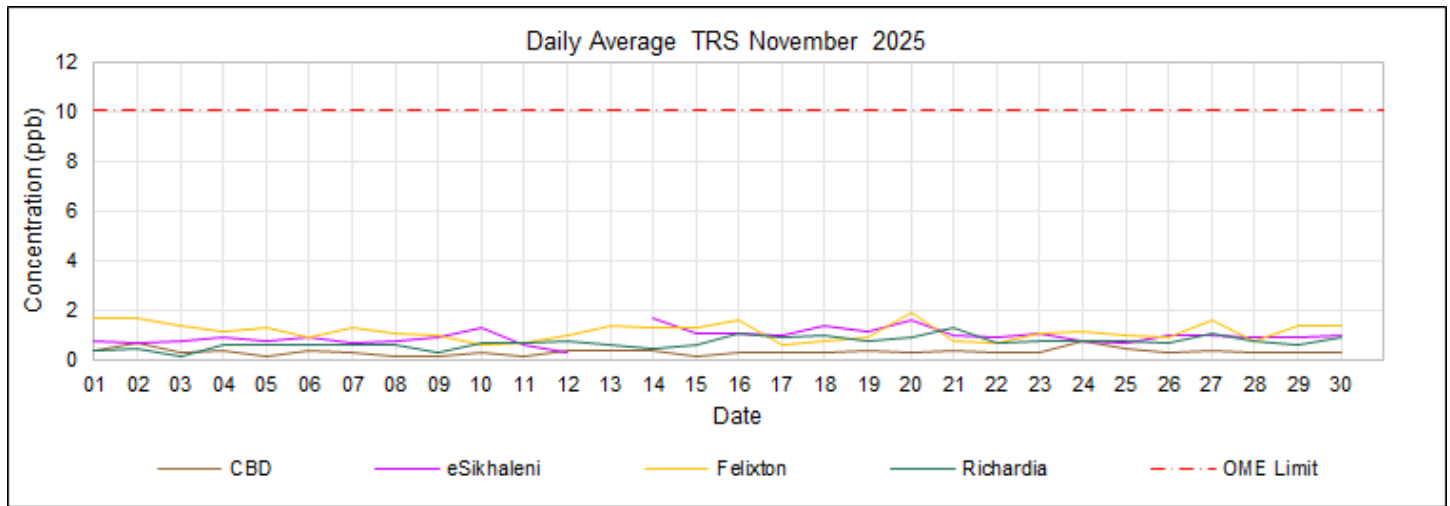


Figure 6.4: TRS daily average concentration.

Missing Data (TRS):

- eSk - Power outage, data invalidation (1 day/s with <80% data capture, 13 November 2025).

### 6.6. 30-minute

The TRS 30-minute average concentrations are shown in Figure 6.5, and exceedances in Table 6.3. Eighteen (18) exceedances of the WHO Limit (5.0 ppb) were measured.

Table 6.3: TRS 30-minute average exceedances (WHO).

TRS 30-minute WHO H <sub>2</sub> S Limit (5.0 ppb)	18
<b>CoU</b>	<b>4</b>
Richardia	4
Sewage discharge	4
<b>Local source</b>	<b>1</b>
eSikhaleni	1
RBCAA allocation	1
<b>Mondi</b>	<b>4</b>
eSikhaleni	1
SETP	1
Felixton	1
SETP	1
Richardia	2
SETP	2
<b>THS</b>	<b>4</b>
Felixton	4
RBCAA allocation	1
Boilers-coal operated	3
<b>THS - Mondi</b>	<b>5</b>
Felixton	5
Boilers-coal operated + Mondi SETP	5

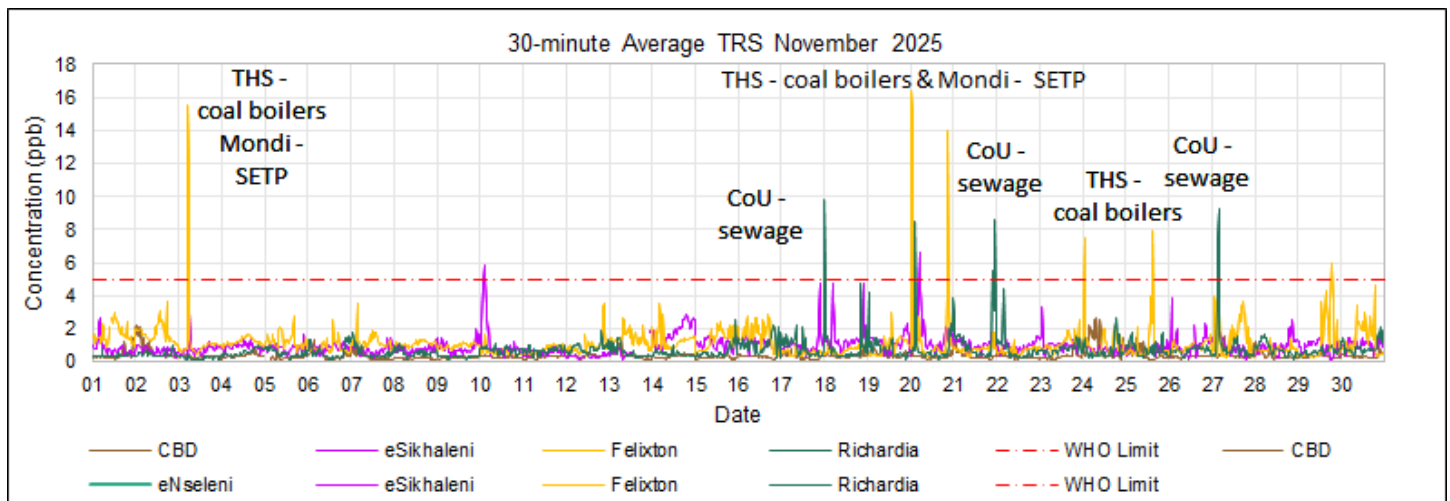


Figure 6.5: TRS 30-minute average concentration.

### 6.7. 10-minute

The TRS 10-minute average concentrations are shown in Figure 6.6, and exceedances in Table 6.4. Twenty-three (23) exceedances of the OME Limit (9.3 ppb) were measured.

Table 6.4: TRS 10-minute average exceedances (OME).

TRS 10-minute OME Limit (9.3 ppb)	23
<b>CoU</b>	<b>6</b>
Richardia	6
Sewage discharge	6
<b>Mondi</b>	<b>4</b>
Felixton	2
SETP	2
Richardia	2
SETP	2
<b>THS</b>	<b>2</b>
Felixton	2
RBCAA allocation	1
Boilers-coal operated	1
<b>THS - Mondi</b>	<b>11</b>
Felixton	11
Boilers-coal operated + Mondi SETP	11

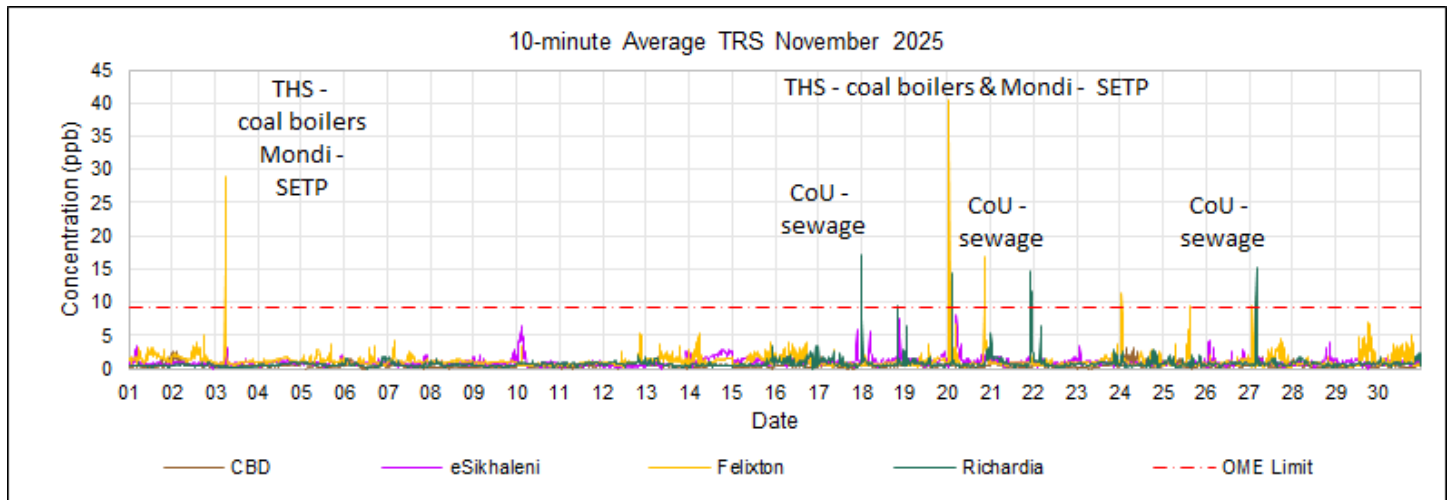


Figure 6.6: TRS 10-minute average concentrations.

### 6.8. Exceedances

The number of days on which exceedances occurred, plus comparisons to previous months, is shown in Figure 6.7, and a summary of the TRS exceedances, broken down per station, is presented in Table 6.5. TRS exceedances can be associated with emissions because of process upsets (e.g., planned maintenance, plant shutdowns, or start-up), leaks in equipment, pipelines, seals, and valves (fugitive emissions), or an event (e.g., fires or emergency shutdowns). According to the relevant Air Quality Index (AQI), the areas where no exceedances were measured may have good air quality.

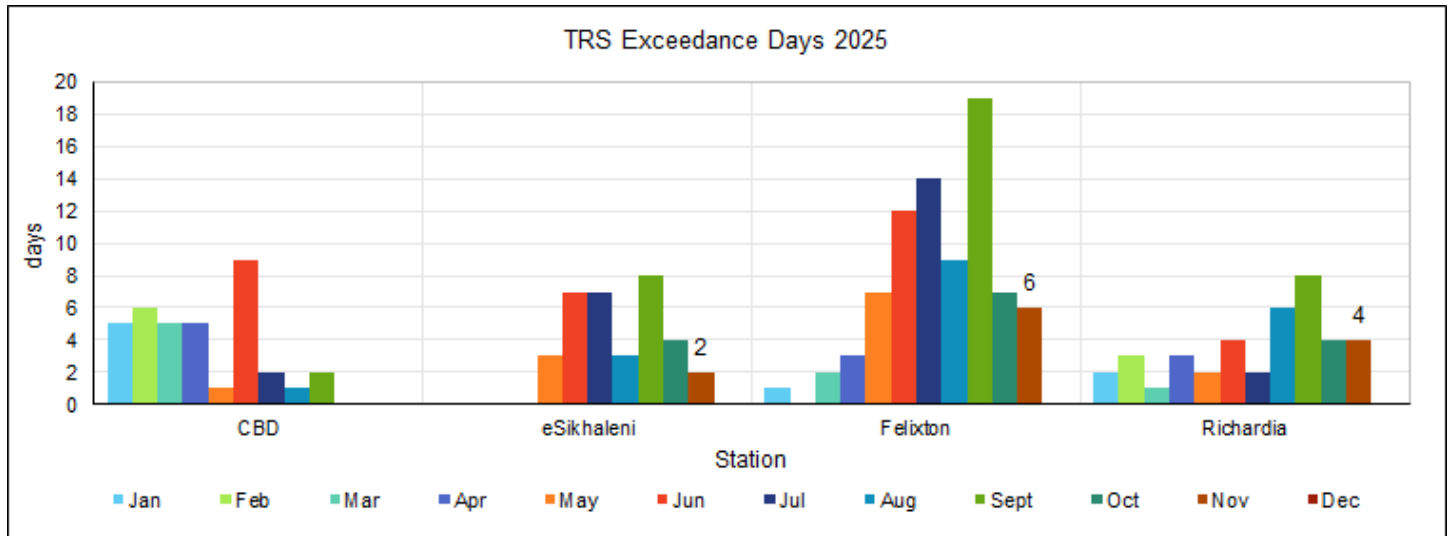


Figure 6.7: TRS exceedance days.

Table 6.5: TRS exceedance summary.

2025	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>TRS 24-hr-OME Limit (10.1 ppb)</b>													
CBD	1	-	-	-	-	-	-	-	-	-	-	-	1
eSikhaleni	-	-	-	-	-	-	-	-	-	-	-	-	0
Felixton	-	-	-	-	-	-	-	-	-	-	-	-	0
Richardia	-	-	-	-	-	-	-	-	-	-	-	-	0
<b>TRS 30-minute WHO H<sub>2</sub>S Limit (5.0 ppb)</b>													
CBD	34	25	15	10	2	41	3	10	3	-	-	-	143
eSikhaleni	-	-	-	-	4	19	11	4	29	5	2	-	74
Felixton	1	-	8	7	11	31	51	20	51	11	10	-	201
Richardia	5	7	3	7	3	16	3	9	19	9	6	-	87
<b>TRS 10-minute OME Limit (9.3 ppb)</b>													
CBD	53	10	8	7	-	27	-	-	2	-	-	-	107
eSikhaleni	-	-	-	-	4	11	8	1	10	5	-	-	39
Felixton	2	-	4	10	10	43	66	13	46	4	15	-	213
Richardia	3	1	-	9	-	13	-	19	24	12	8	-	89

## 7. MONTHLY AIR QUALITY

Where possible, the RBCAA assesses data collected by its network against National Standards, International Guidelines, and Local Targets. The WHO air quality guidelines (AQGs) are intended for global use and have been developed to support actions that achieve air quality protection for public health in various contexts. On the other hand, air quality standards and local targets are set by each country or region to protect the public health of its citizens, and as such, are an essential component of national risk management and environmental policies. National standards and local targets vary according to the approach adopted for balancing health risks, technological feasibility, economic considerations, and other political and social factors. These factors, in turn, depend on, among other things, the level of development and national capability in air quality management. (WHO, 2005)

### 7.1. Conclusion

Determining air quality concerning pollutants measured and impacts simulated is based on comparison to and exceedances of short-term (10-minute, 30-minute, 1-hour and 24-hour averages) and long-term (monthly and annual averages) targets, guidelines, and standards.

AIMS concludes that during November 2025, based on the following:

- ▶ Measured long-term average concentrations (chronic exposure) and WHO health guidelines of concern are:
  - PM<sub>10</sub> at CBD, eSikhaleni, Felixton, Richardia and Scorpio - all points monitored.
  - PM<sub>2.5</sub> at Brackenham, Felixton, Harbour West and Scorpio - all points monitored.
  
- ▶ Measured short-term average concentrations (acute exposure) and the WHO health guidelines, ambient air quality was compromised by:
  - PM<sub>10</sub> at Richardia.
  - PM<sub>2.5</sub> at Brackenham, Felixton, Harbour West and Scorpio - all points monitored.
  - SO<sub>2</sub> at Arboretum, Harbour West, Richardia, and Scorpio; and
  - TRS at eSikhaleni, Felixton and Richardia.

## 8. AIRGRADIENT MONITORING NETWORK

The AirGradient network was established towards the end of 2023 as a co-location study to verify the accuracy of its particulate measurements. It was later expanded in response to an RBCAA objective, adding monitoring capabilities for additional pollutants. Initially, there were only two sites, Harbour West and Richardia, and only particulates (PM<sub>10</sub>, PM<sub>2.5</sub> and PM<sub>1</sub>) were monitored. The network was expanded to Brackenham, CBD, eSikhaleni and Felixton in July 2024, and all the monitors were upgraded to measure volatile organic compounds (TVOC), nitrogen oxides (NO<sub>x</sub>), and carbon dioxide (CO<sub>2</sub>).

AirGradient monitors are designed to provide accessible and cost-effective solutions for air quality monitoring. While they offer valuable insights into environmental conditions, there are notable differences when compared to analysers approved by organisations such as the U.S. Environmental Protection Agency (EPA):

- **Accuracy and Precision:** Approved analysers are subjected to rigorous testing to ensure high accuracy and precision in measuring specific pollutants. AirGradient monitors utilise sensors such as the Plantower PMS5003 for particulate matter and the SenseAir S8 for CO<sub>2</sub>, which are dependable but may not meet the stringent accuracy levels of certified equipment. For instance, the SenseAir S8 has an accuracy of  $\pm 30 \text{ ppm} \pm 3\%$  of the reading, which is suitable for general monitoring but may not meet standards for regulatory compliance.
- **Calibration and Certification:** Approved devices undergo regular calibration and certification processes to maintain compliance with federal standards. AirGradient monitors, particularly the DIY kits, may not come with such certifications, and their accuracy can be influenced by factors like sensor placement and environmental conditions. However, AirGradient offers fully assembled monitors certified for CE, FCC, RoHS, and REACH, providing a higher level of assurance in their performance.
- **Data Application:** AirGradient monitors are well-suited for educational purposes, personal use, and preliminary air quality assessments. They are beneficial for raising awareness and informing decisions on indoor air quality management. In contrast, approved analysers are employed for regulatory monitoring, research, and enforcement of air quality standards, where data accuracy and reliability are paramount.
- **Cost and Accessibility:** AirGradient monitors are more affordable and accessible, making them ideal for widespread use in homes, schools, and communities. Approved analysers are significantly more expensive and are typically used by governmental agencies and research institutions.

In summary, while AirGradient monitors provide valuable air quality data for non-regulatory applications, they do not replace the precision and certification of approved analysers required for compliance and enforcement purposes.

The RBCAA AirGradient monitoring network comprises six (6) stations (Figure 8.1).



Figure 8.1: RBCAA monitoring network.

## 8.1. Data Availability

The percentage of valid data received from the AirGradient network for 2025 is shown in Table 8.1.

Table 8.1: AirGradient network data availability.

	Brk	CBD	eSk	Flx	HW	MS	Mtz	Rch
Jan 2025	99	98	97	97	98	-	-	97
Feb 2025	89	90	89	86	86	-	-	90
Mar 2025	99	100	97	95	100	-	-	100
Apr 2025	86	96	93	93	96	-	-	96
May 2025	55	99	99	93	99	-	-	99
Jun 2025	96	97	96	89	97	-	-	95
Jul 2025	100	99	99	98	100	-	-	98
Aug 2025	100	100	99	96	100	56	-	100
Sept 2025	97	86	96	92	96	96	69	97
Oct 2025	100	99	97	97	100	100	98	100
Nov 2025	97	96	93	97	96	96	95	97
Dec 2025	-	-	-	-	-	-	-	-

**Notes:**

1. Red - Not acceptable for statistical purposes (<80%),
2. Orange – Does not meet SANAS data capture requirements (<90%),
3. Yellow – RBCAA reporting requirement (<=95%)

**Missing Data:**

- **Brackenham**
  - February '25 –power outages (load shedding).
  - April '25 – power outages.
  - May '25 –issue with firmware upgrade /Wi-Fi connectivity.
- **CBD**
  - February '25 –power outages (load shedding).
  - September'25 - power outage plus issue with inverter auto start.
- **eSikhaleni**
  - February '25 –power outages (load shedding).
  - April '25 – power outages.
  - November'25 – power outages.
- **Felixton**
  - February '25 –power outages (load shedding).
  - April '25 – power outages.
  - June'25 – power outages.
  - September'25 – power outages.
- **Harbour West**
  - February '25 –power outages (load shedding).
- **Meerensee**
  - August'25 – unit commissioned on the 14<sup>th</sup> of August.
- **Mtunzini**
  - September'25 – unit commissioned on the 5<sup>th</sup> of September, power outages.
  - November'25 – power outages.
- **Richardia**
  - February '25 –power outages (load shedding).
  - June'25 – power outages.

## 8.2. Particulate Monitoring

### 8.2.1. Monthly

PM<sub>10</sub>, PM<sub>2.5</sub> and PM<sub>1</sub> monthly average concentrations are shown in Figure 8.2, Figure 8.3, and Figure 8.4. Comparisons to previous months are also provided (Figure 8.5, Figure 8.6, and Figure 8.7). There are similar seasonal trends, with elevated concentrations during winter.

- ▶ PM<sub>10</sub> monthly average concentrations did not exceed the RSA Annual Limit or the WHO Annual Limit.
- ▶ PM<sub>2.5</sub> monthly average concentrations did not exceed the RSA Annual Limit; the WHO Annual Limit was exceeded at eSikhaleni.

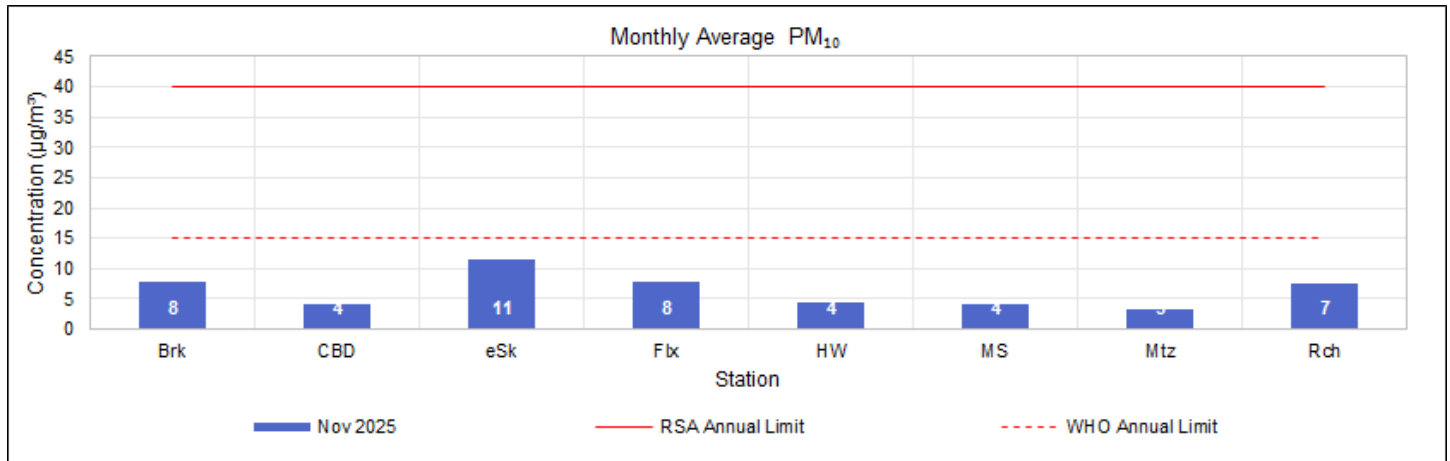


Figure 8.2: PM<sub>10</sub> monthly concentration.

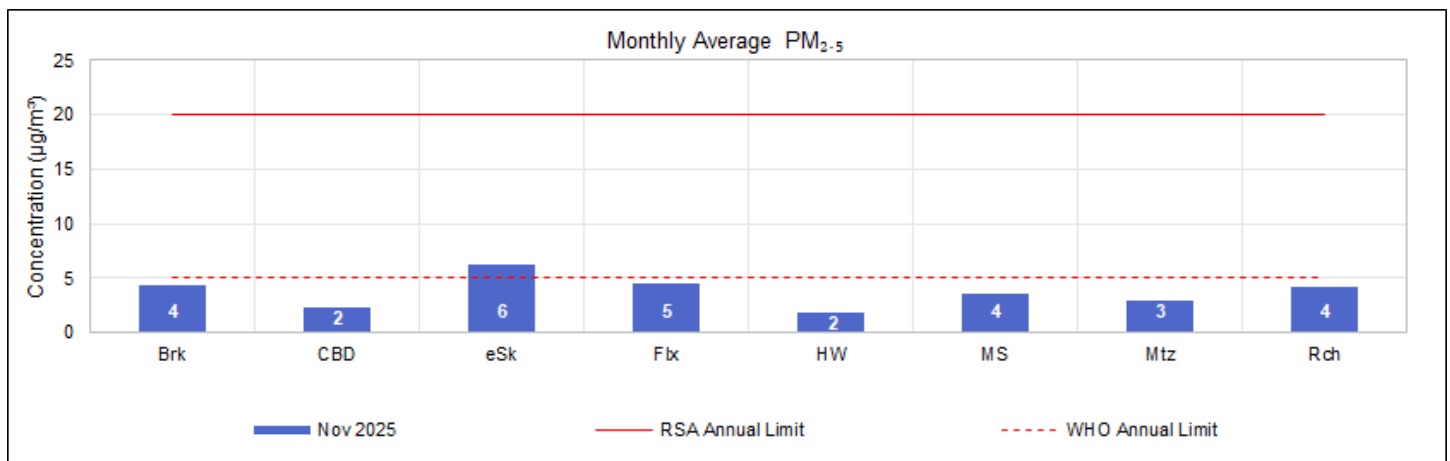


Figure 8.3: PM<sub>2.5</sub> monthly concentration.

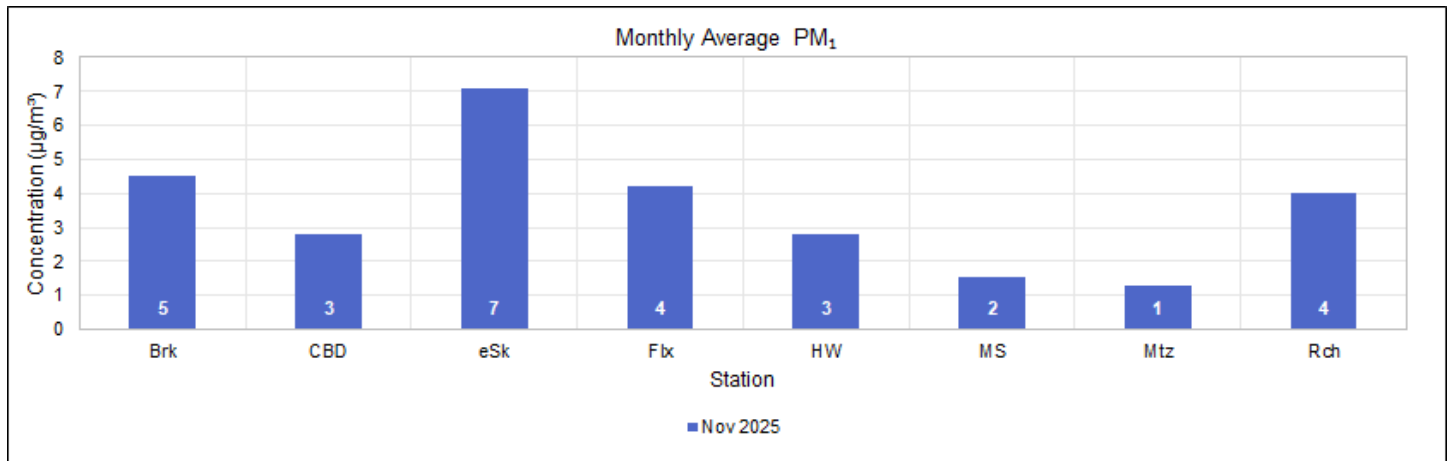


Figure 8.4: PM<sub>10</sub> monthly concentration.

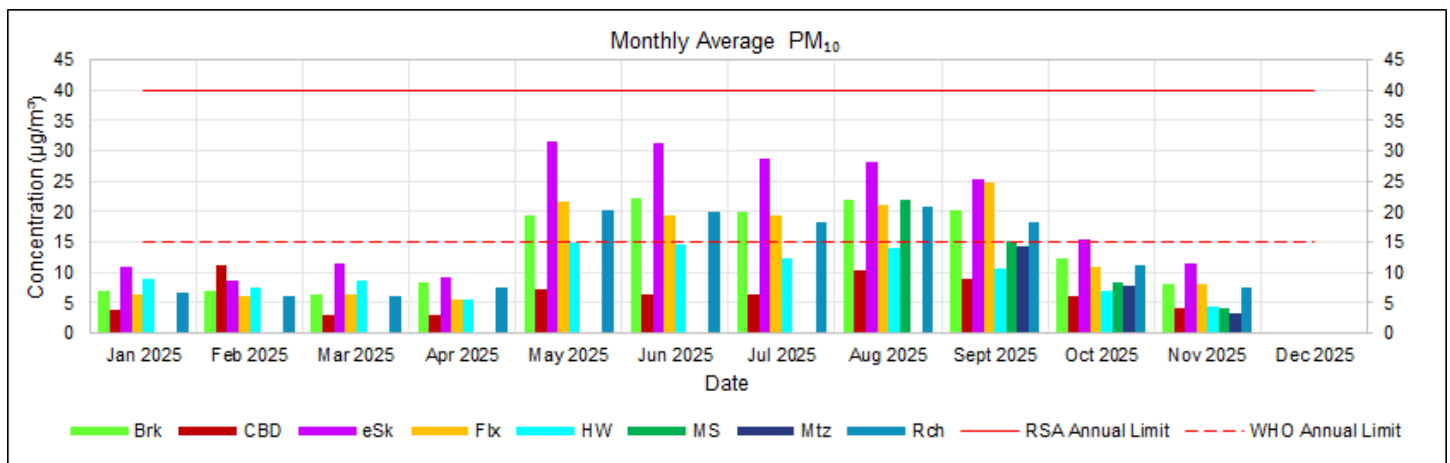


Figure 8.5: PM<sub>10</sub> monthly comparison.

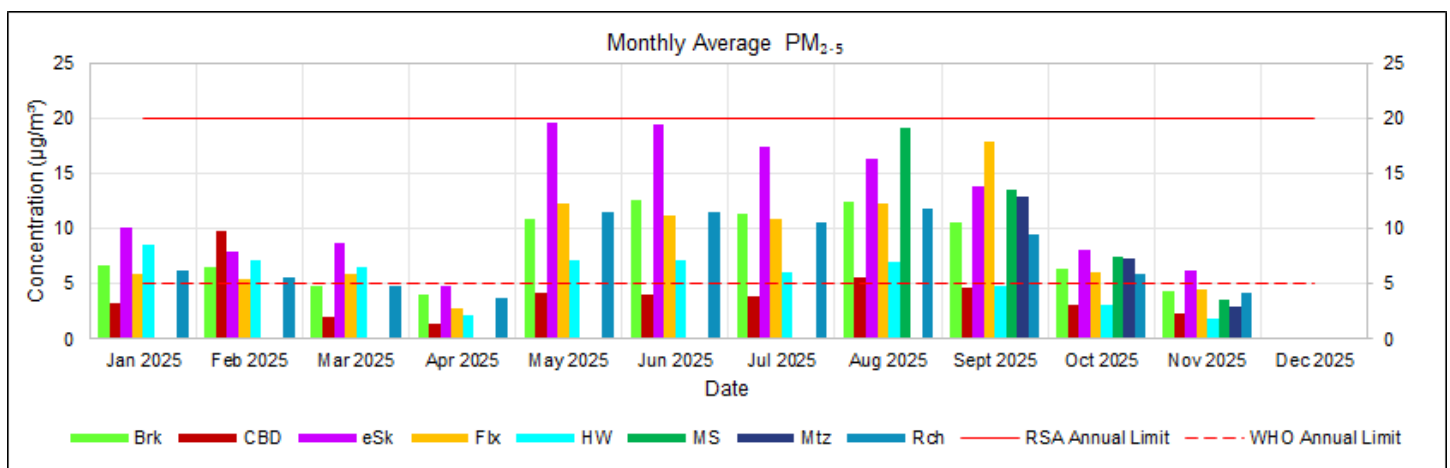


Figure 8.6: PM<sub>2.5</sub> monthly comparison.

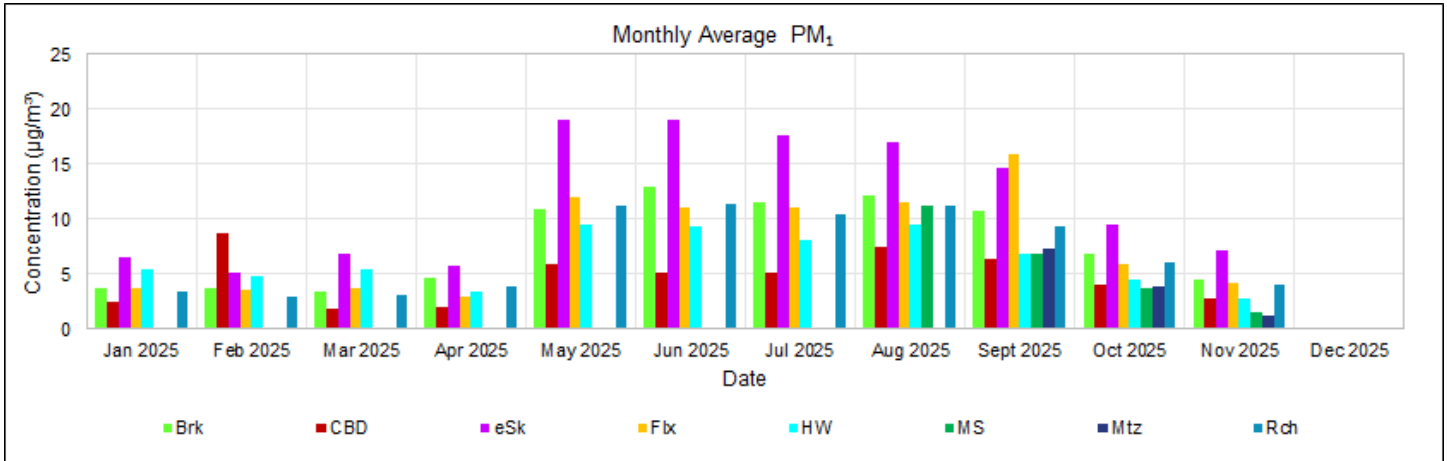


Figure 8.7: PM<sub>10</sub> monthly comparison.

### 8.2.2. Diurnal

PM diurnal concentrations are shown below (Figure 8.8, Figure 8.9, and Figure 8.10).

- ▶ PM<sub>10</sub> diurnal concentrations did not exceed the RSA daily limit or the WHO daily limit.
- ▶ PM<sub>2.5</sub> diurnal concentrations did not exceed the RSA limit or the WHO daily limit.

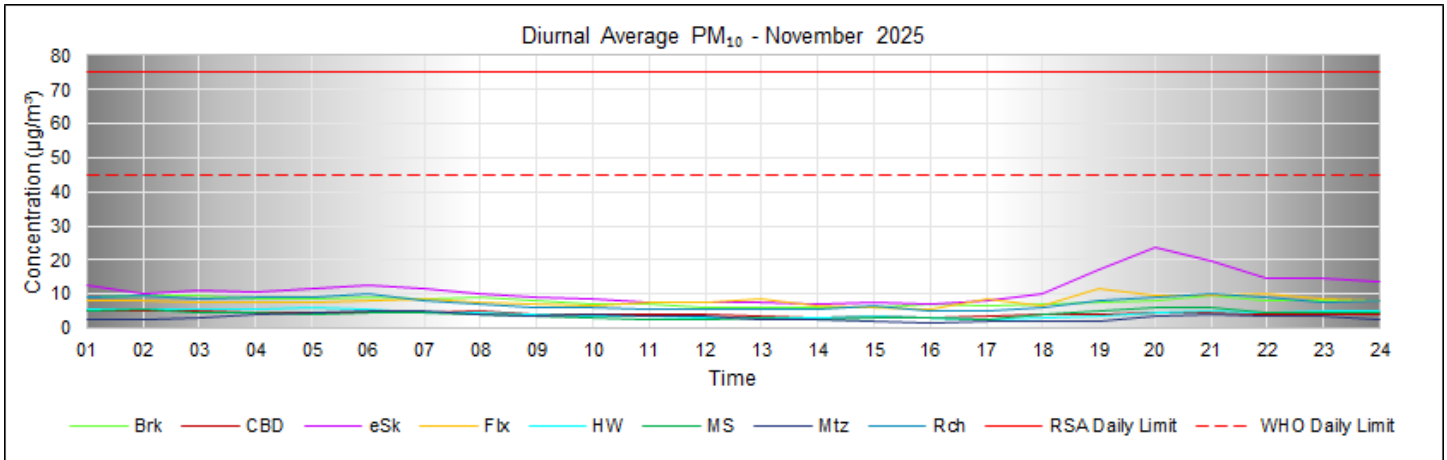


Figure 8.8: PM<sub>10</sub> diurnal concentrations.

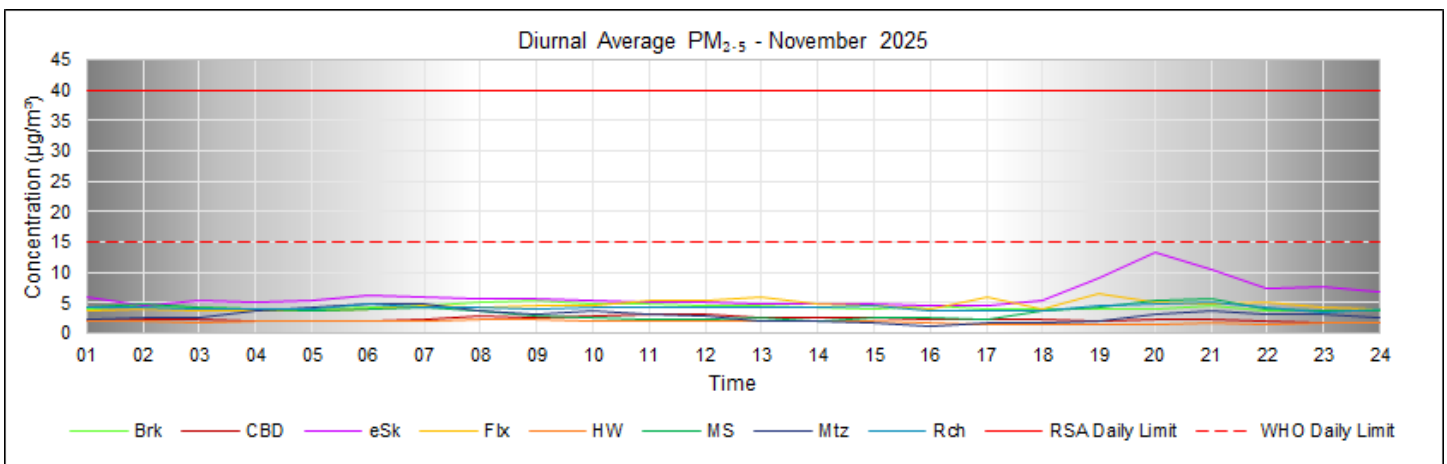


Figure 8.9: PM<sub>2.5</sub> diurnal concentrations.

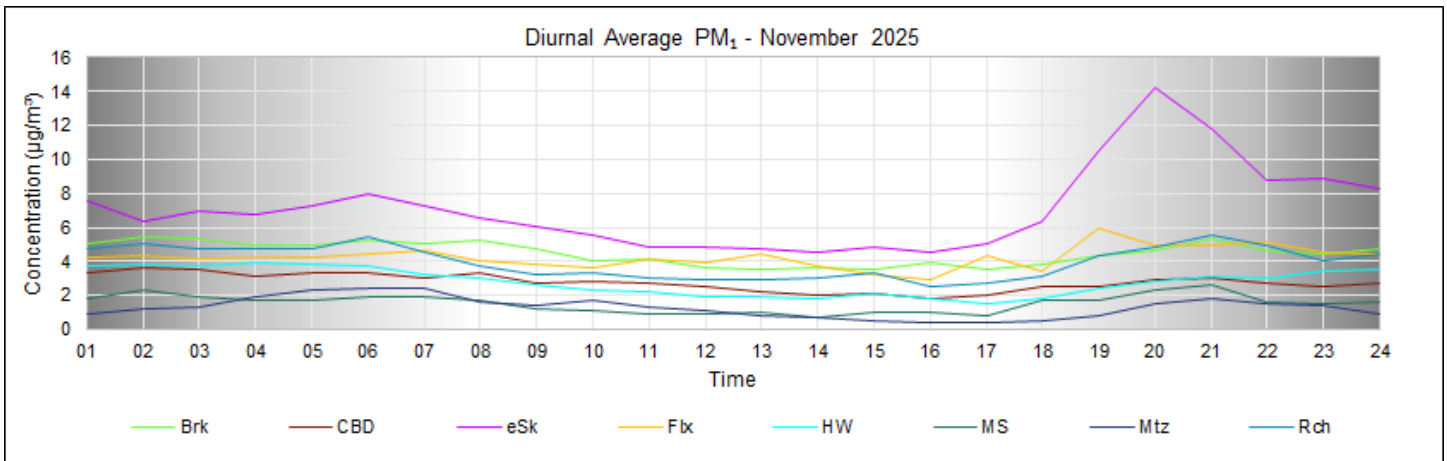


Figure 8.10: PM<sub>1</sub> diurnal concentrations.

### 8.2.3. Daily

PM daily concentrations are shown below (Figure 8.11, Figure 8.12, and Figure 8.13).

- ▶ The PM<sub>10</sub> RSA daily limit and the WHO limit were not exceeded.
- ▶ The PM<sub>2.5</sub> RSA limit was not exceeded; the WHO limit was exceeded at eSikhaleni.

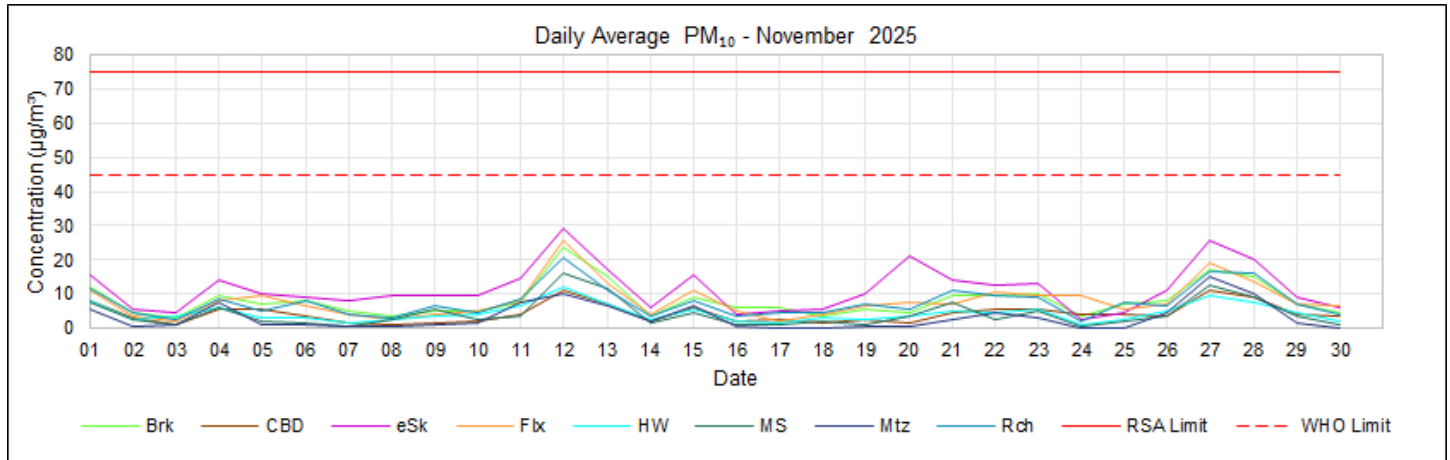


Figure 8.11: PM<sub>10</sub> daily concentrations.

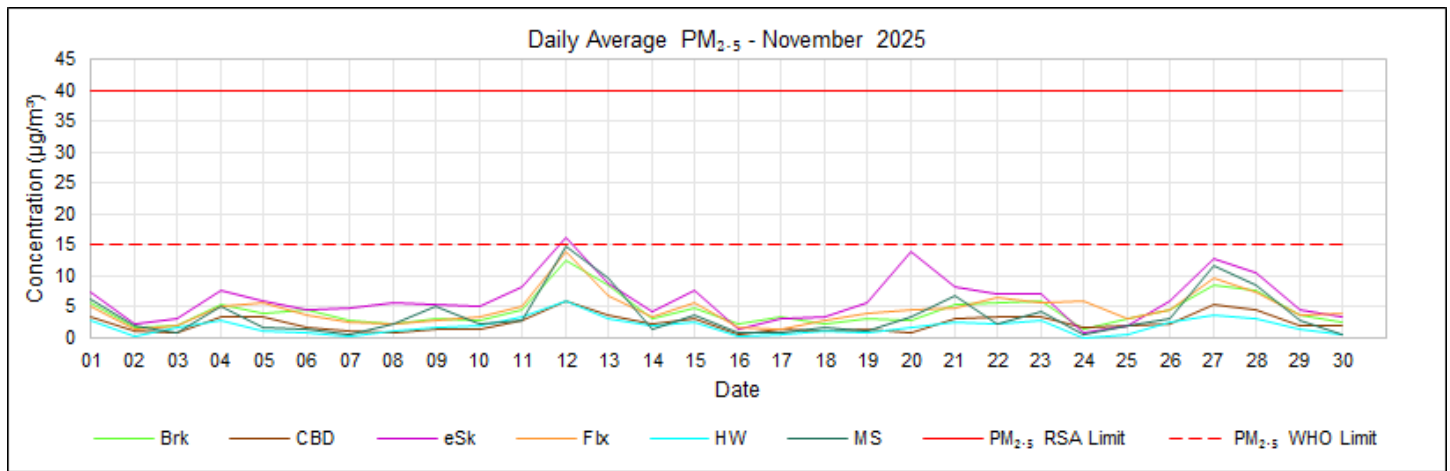


Figure 8.12: PM<sub>2.5</sub> daily concentrations.

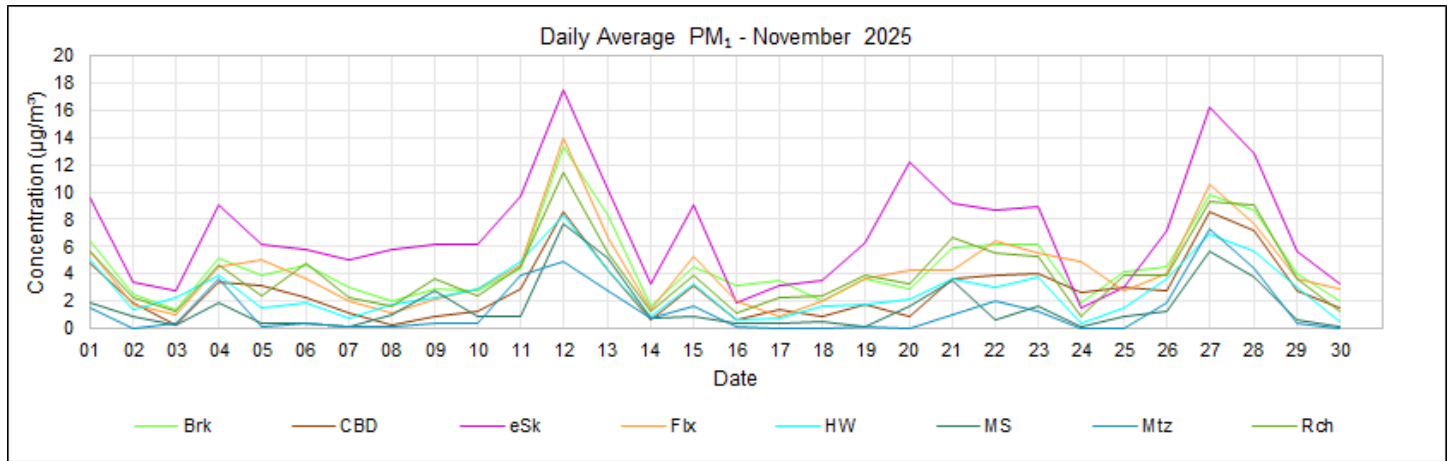


Figure 8.13: PM<sub>1</sub> daily concentrations.

### 8.3. Total Volatile Organic Compounds Monitoring

Total Volatile Organic Compounds (VOCs) refer to organic chemicals that easily evaporate at ambient temperatures. They are commonly present in outdoor air due to sources like industrial emissions, vehicle exhaust, and the use of chemical products. These compounds can significantly contribute to air pollution, harming both human health and the environment. Exposure to high concentrations of TVOCs can cause short-term symptoms such as irritation of the eyes, nose, and throat, as well as headaches and dizziness. Prolonged exposure may lead to more severe health issues, including damage to the liver, kidneys, and central nervous system. The AirGradient TVOC sensors cannot distinguish between harmful and harmless substances and don't measure absolute levels but changes in the concentration (index); this can help identify (and avoid) emission events such as rush hours.

#### 8.3.1. Monthly

TVOC monthly average concentrations are shown in Figure 8.14. Comparisons to previous months are also provided (Figure 8.15).

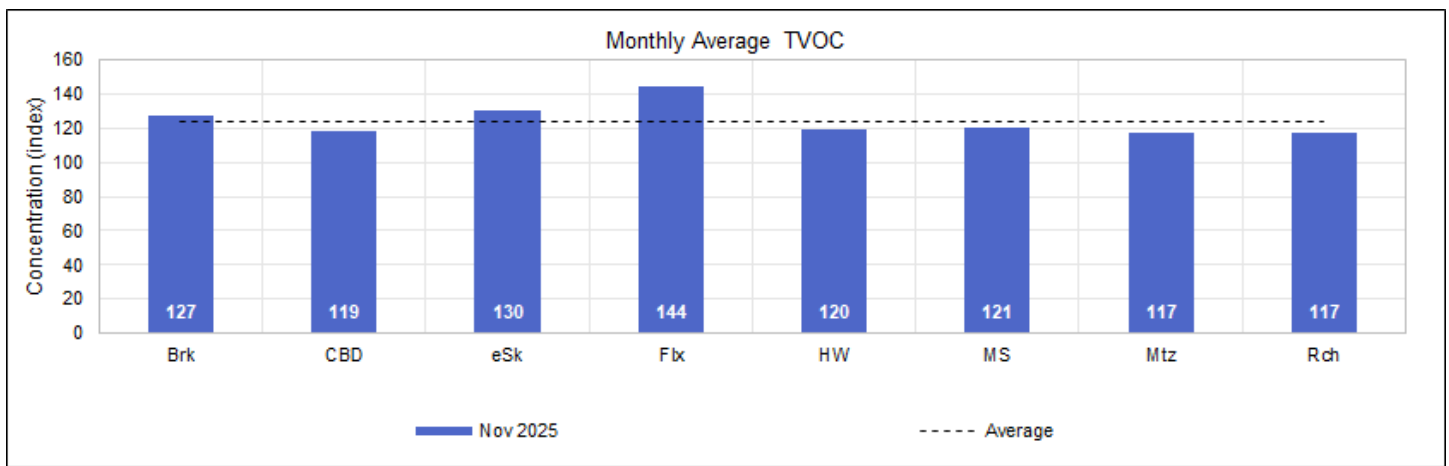


Figure 8.14: TVOC monthly concentration.

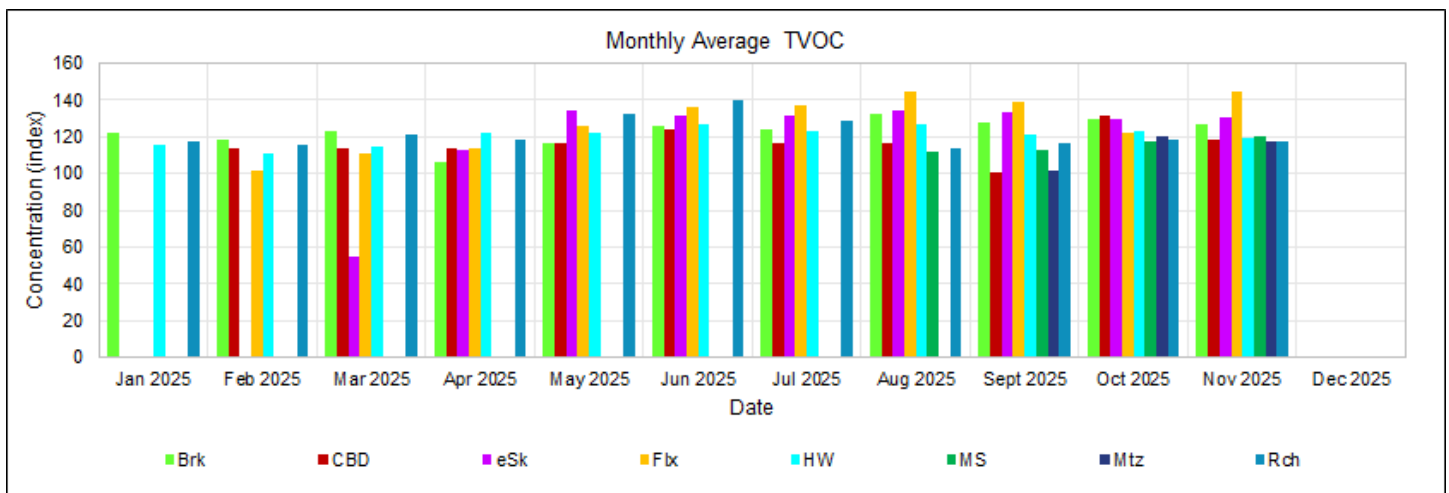


Figure 8.15: TVOC monthly comparison.

### 8.3.2. Diurnal

TVOC diurnal concentrations are shown below (Figure 8.8, Figure 8.9, and Figure 8.10).

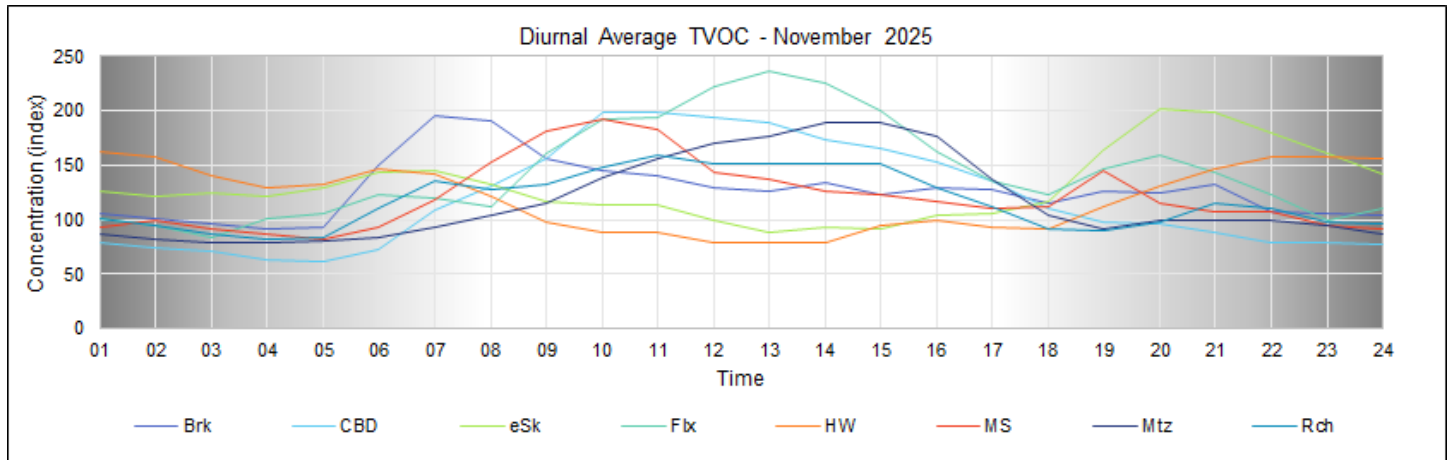


Figure 8.16: TVOC diurnal concentrations.

### 8.3.3. Daily

TVOC daily concentrations are shown below (Figure 8.17).

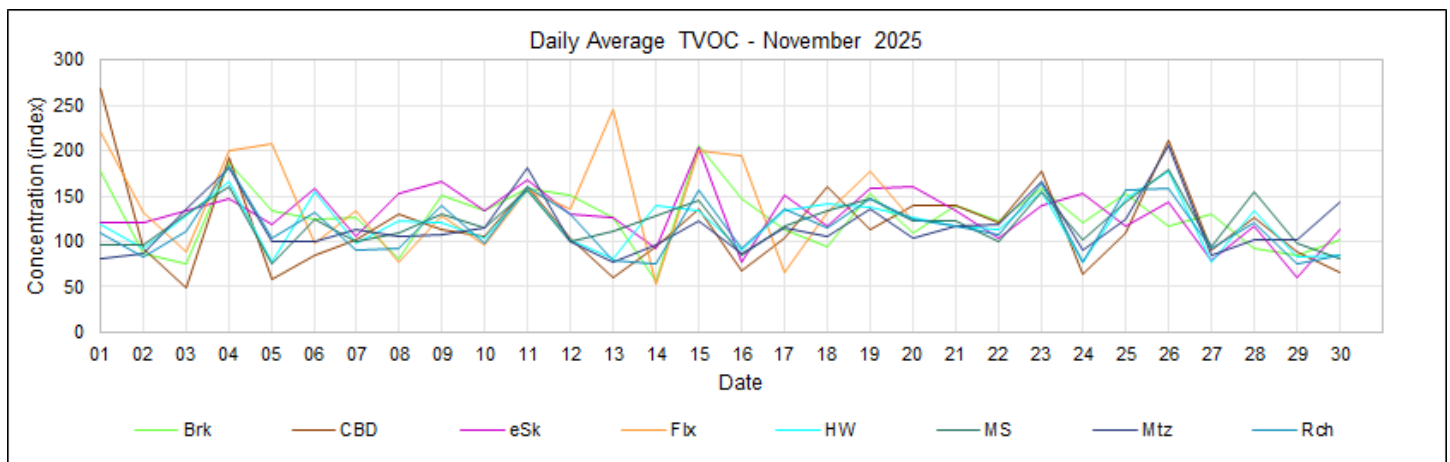


Figure 8.17: TVOC daily concentrations.

### 8.3.4. Hourly

TVOC hourly concentrations are shown below (Figure 8.18).

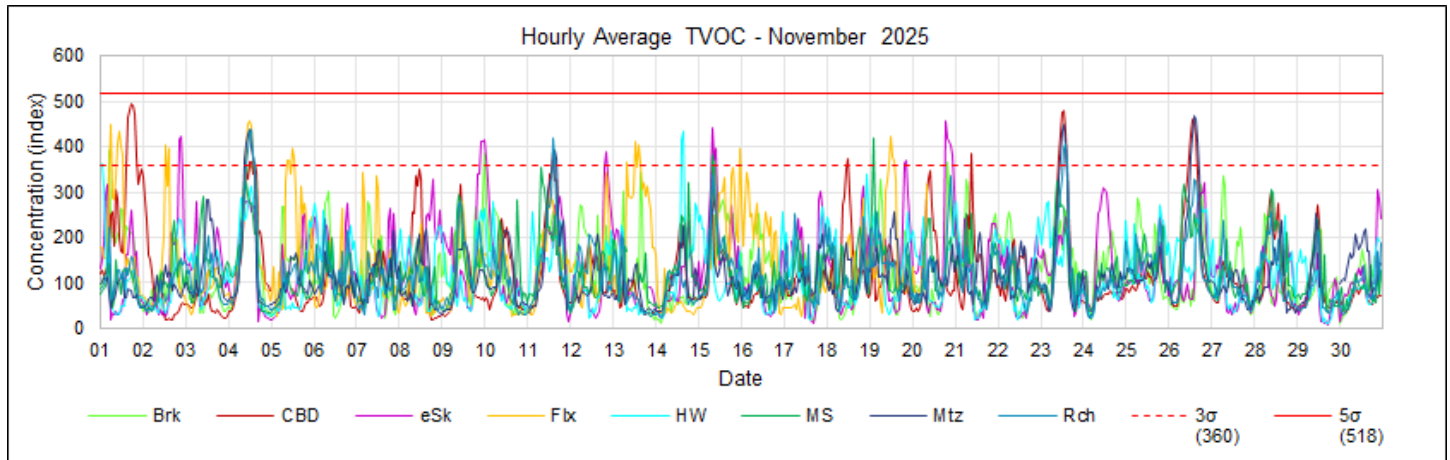


Figure 8.18: TVOC hourly concentrations.

Table 8.2: TVOC exceedances of the 3σ and 5σ limits.

Limit	Brk	CBD	eSk	Flx	HW	MS	Mtz	Rch	Total
3σ	5	22	16	25	3	2	18	11	73
5σ	0	0	0	0	0	0	0	0	0

### 8.4. Nitrogen Oxides Monitoring

Nitrogen oxides (NO<sub>x</sub>) refer to a group of highly reactive gases that are primarily composed of nitrogen dioxide (NO<sub>2</sub>) and nitric oxide (NO). These gases are produced through the combustion of fossil fuels in vehicles, power plants, and industrial facilities. NO<sub>x</sub> emissions significantly contribute to air pollution, playing a key role in forming ground-level ozone and particulate matter, both of which are harmful to human health and the environment. Exposure to elevated levels of NO<sub>x</sub> can lead to respiratory problems, particularly in vulnerable populations such as children, the elderly, and those with pre-existing conditions like asthma. Additionally, NO<sub>x</sub> contributes to the formation of acid rain, which can damage ecosystems and infrastructure. Regulatory standards for NO<sub>x</sub> vary globally, but efforts to reduce these emissions are critical for improving air quality and mitigating environmental impacts. The AirGradient NO<sub>x</sub> sensors don't measure absolute levels but changes in the concentration (index); this can help identify (and avoid) emission events such as rush hours.

#### 8.4.1. Monthly

NO<sub>x</sub> monthly average concentrations are shown in Figure 8.19; comparisons to previous months are also provided (Figure 8.20).

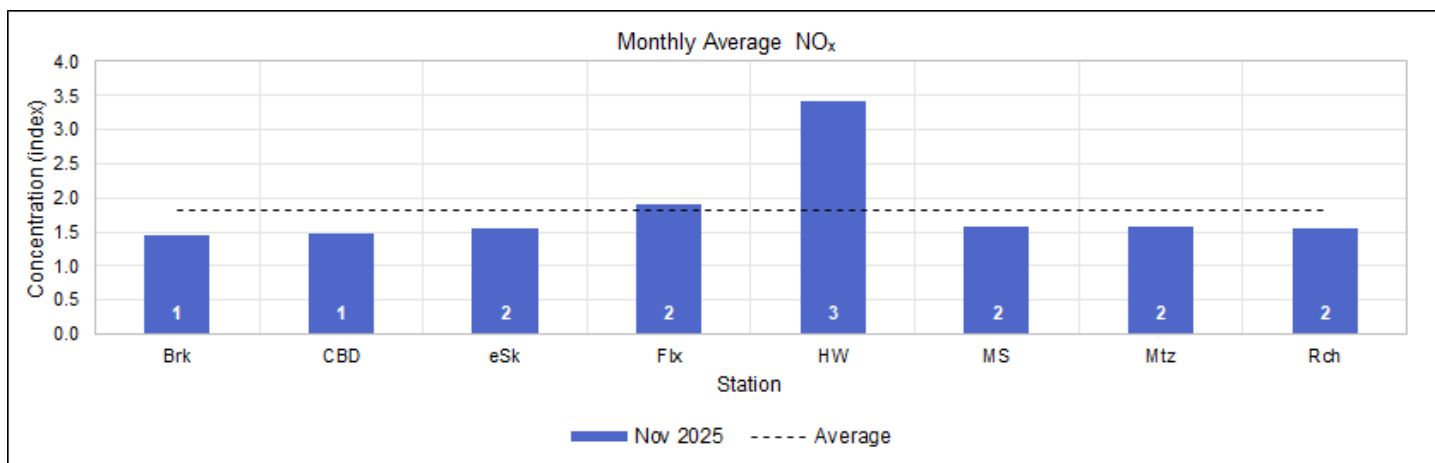


Figure 8.19: NO<sub>x</sub> monthly concentration.

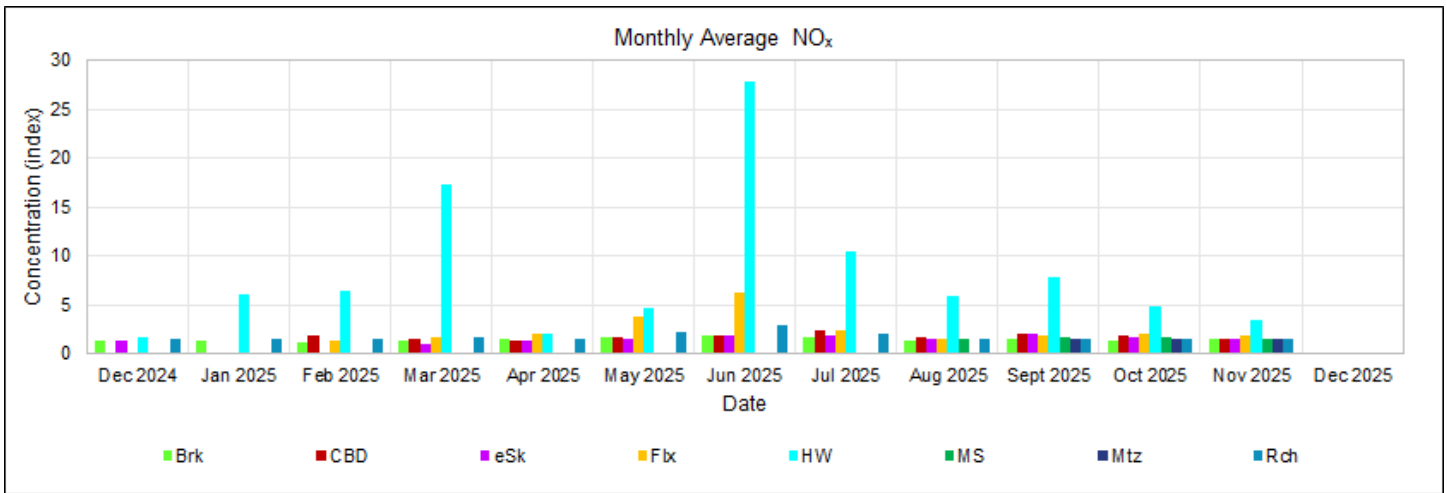


Figure 8.20: NO<sub>x</sub> monthly comparison.

### 8.4.2. Diurnal

NO<sub>x</sub> diurnal concentrations are shown below (Figure 8.21).

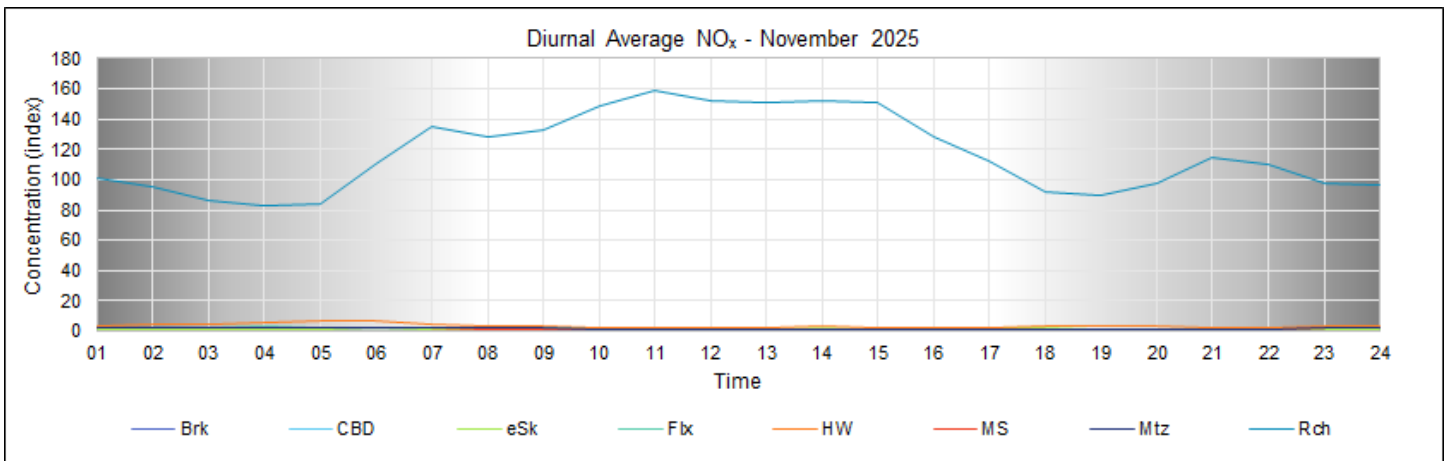


Figure 8.21: NO<sub>x</sub> diurnal concentrations.

### 8.4.3. Daily

NO<sub>x</sub> daily concentrations are shown below (Figure 8.22).

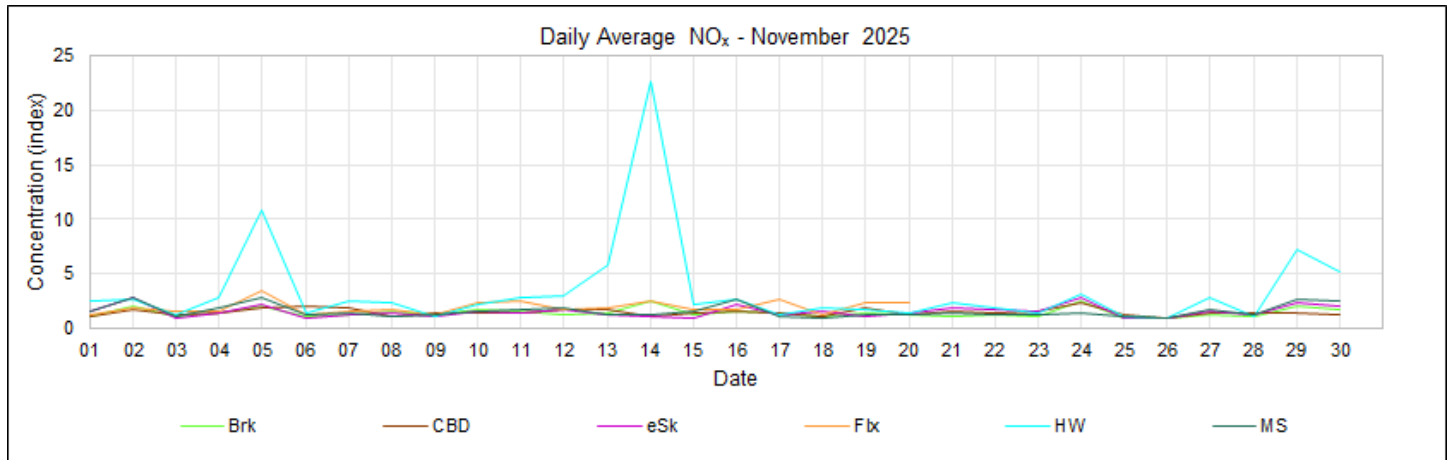


Figure 8.22: NO<sub>x</sub> daily concentrations.

### 8.4.4. Hourly

NO<sub>x</sub> hourly concentrations are shown below (Figure 8.23).

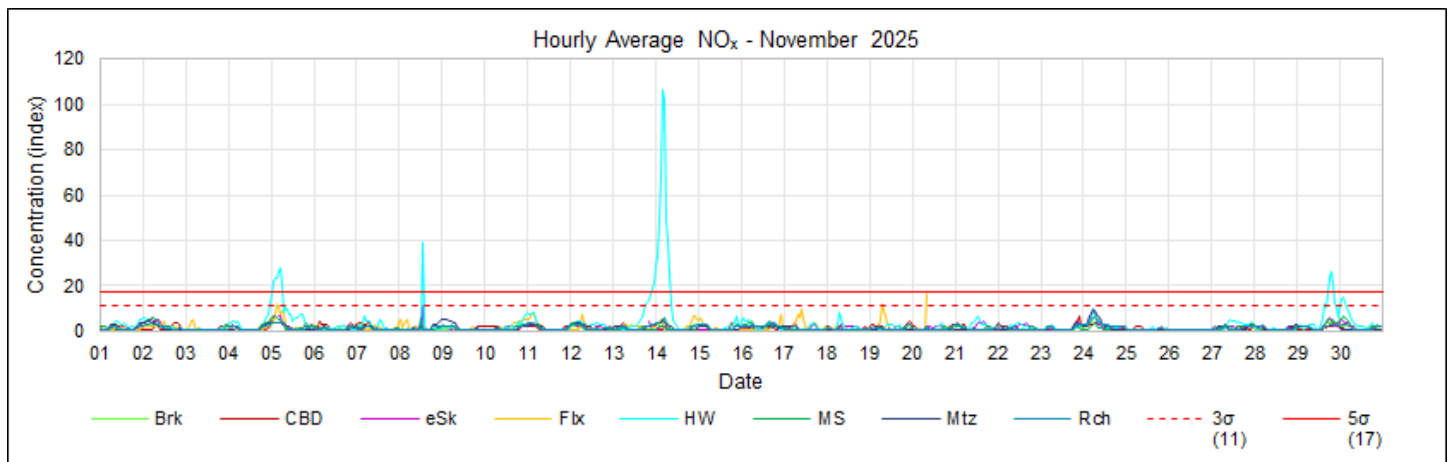


Figure 8.23: NO<sub>x</sub> hourly concentrations.

Table 8.3 NO<sub>x</sub> exceedances of the 3σ and 5σ limits.

Limit	Brk	CBD	eSk	Flx	HW	MS	Mtz	Rch	Total
3σ	0	0	0	3	35	0	0	0	38
5σ	0	0	0	0	21	0	0	0	21

### 8.5. Carbon Dioxide Monitoring

In 2000, the global background concentration of carbon dioxide (CO<sub>2</sub>) was approximately 370 ppm, marking a significant increase from the pre-industrial level of around 280 ppm. This reflected the continued growth in CO<sub>2</sub> emissions from fossil fuel combustion, deforestation, and other human activities during the 20th century. The rate of increase in atmospheric CO<sub>2</sub> had accelerated during the latter half of the century, with an average rise of about 1.5 to 2 ppm per year by the early 2000s.

#### 8.5.1. Monthly

CO<sub>2</sub> monthly average concentrations are shown in Figure 8.24; comparisons to previous months are also provided (Figure 8.25).

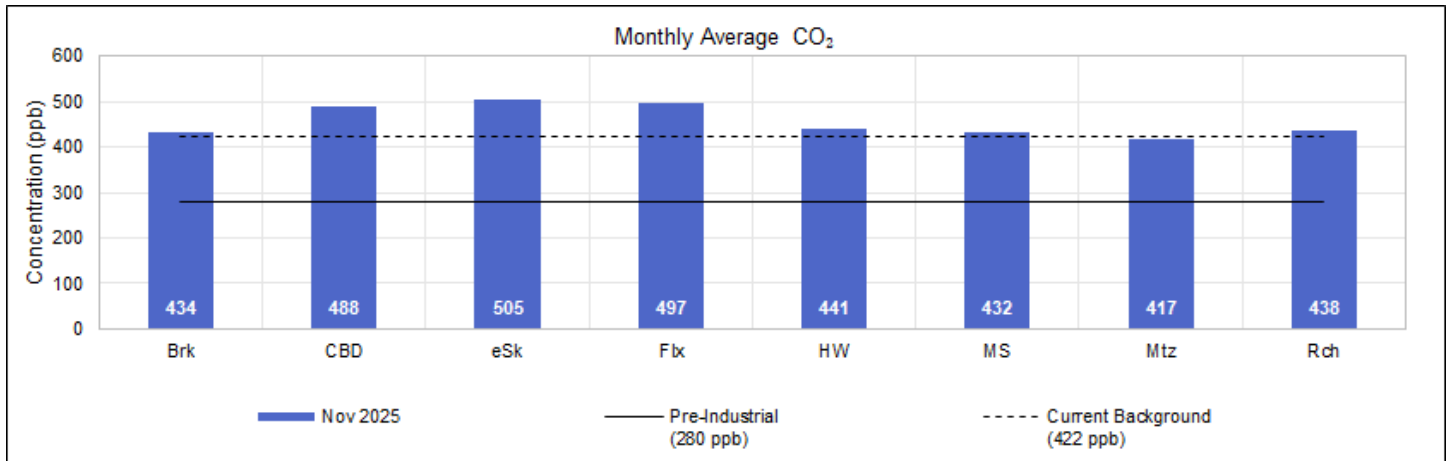


Figure 8.24: CO<sub>2</sub> monthly concentration.

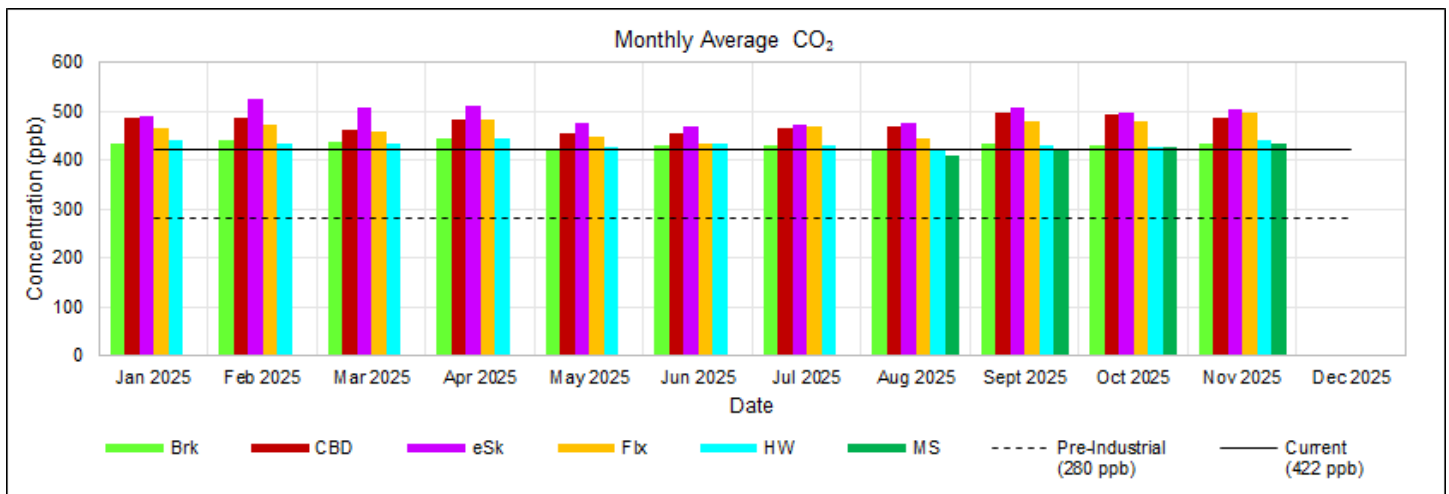


Figure 8.25: CO<sub>2</sub> monthly comparison.

### 8.5.2. Diurnal

CO<sub>2</sub> diurnal concentrations are shown below (Figure 8.26).

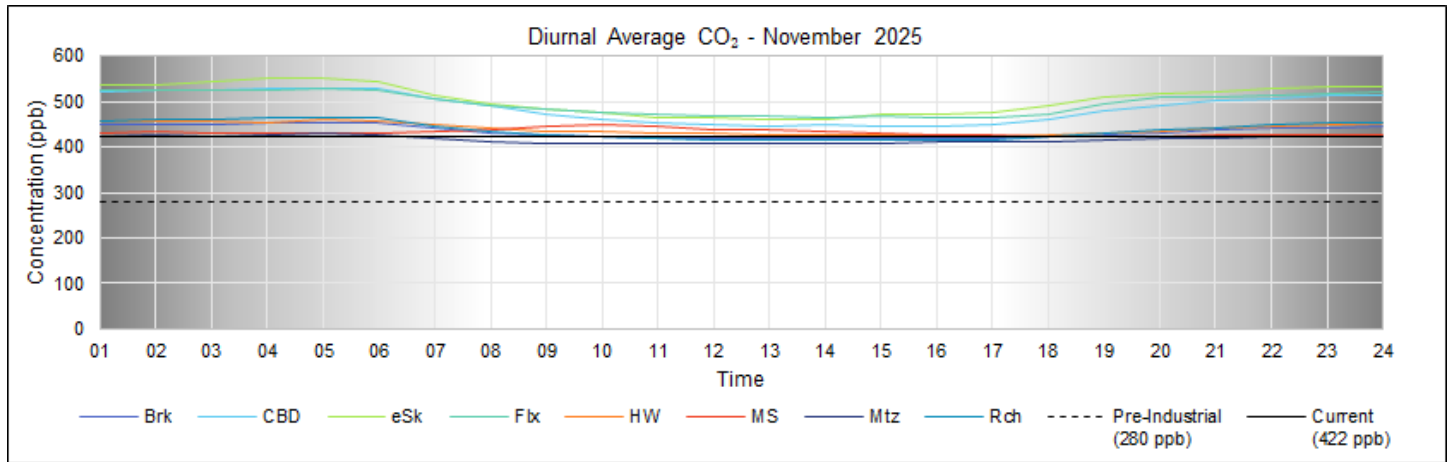


Figure 8.26: CO<sub>2</sub> diurnal concentrations.

### 8.5.3. Daily

CO<sub>2</sub> daily concentrations are shown below (Figure 8.27).

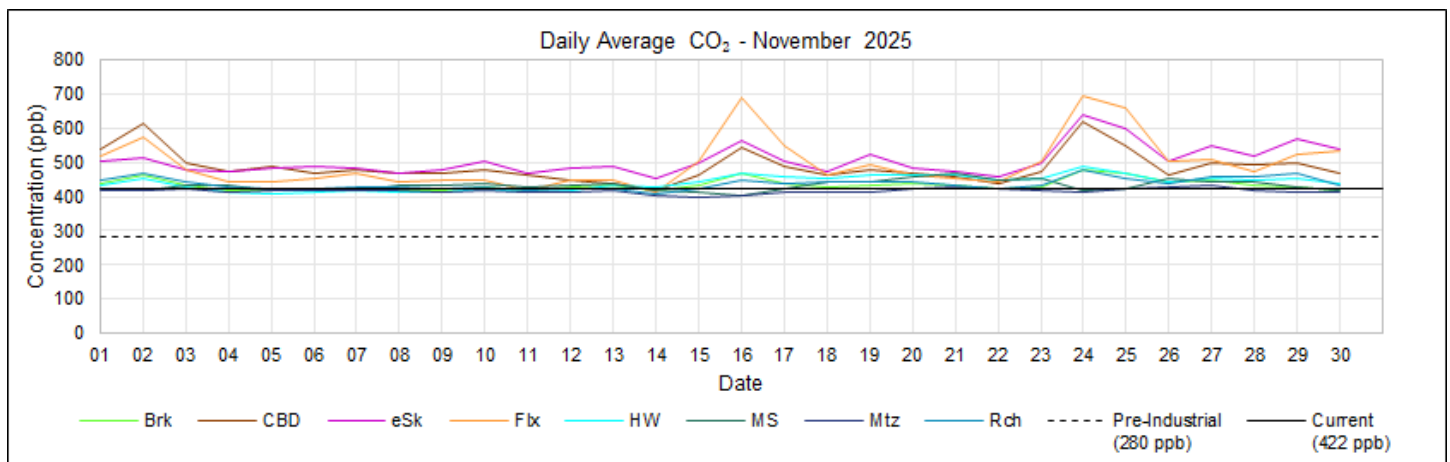


Figure 8.27: CO<sub>2</sub> daily concentrations.

### 8.5.4. Hourly

CO<sub>2</sub> hourly concentrations are shown below (Figure 8.28).

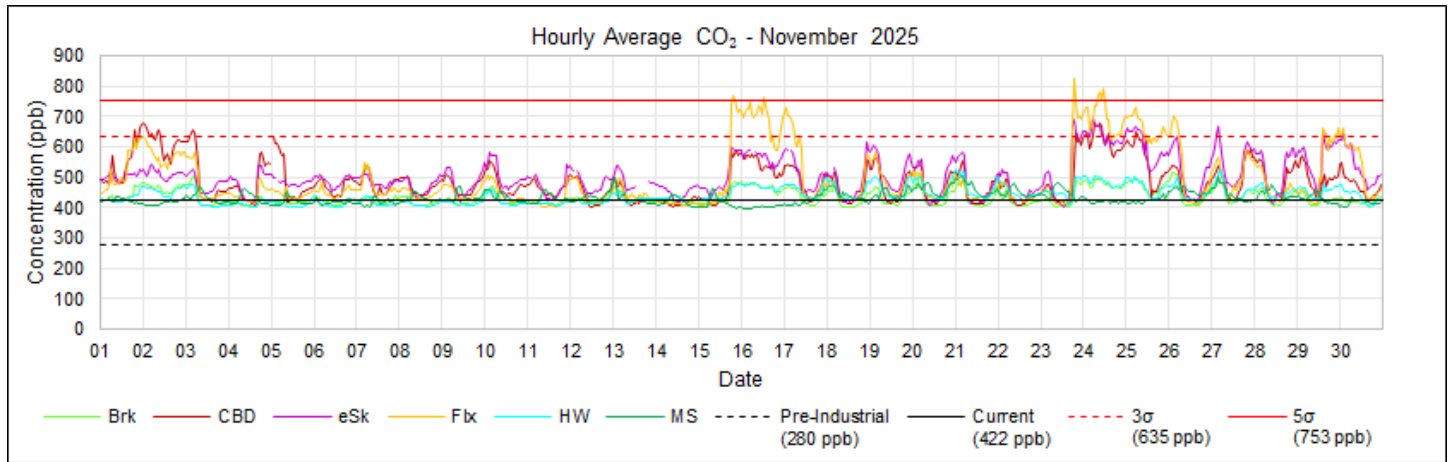


Figure 8.28: CO<sub>2</sub> hourly concentrations.

Table 8.4: CO<sub>2</sub> exceedances of the 3σ and 5σ limits.

Limit	Brk	CBD	eSk	Flx	HW	MS	Mtz	Rch	Total
3σ	0	26	31	86	0	0	0	0	143
5σ	0	0	0	8	0	0	0	0	8

## 9. ACKNOWLEDGEMENT

Air Impact Measurement Specialists compiled this report for the Richards Bay Clean Air Association; contributors include Alicia Garnica and François Nel.

---

Lance Coetzee  
Director

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## APPENDIX A ABBREVIATIONS AND TERMS

List of Abbreviations and Terms	
Chemical Formulae	
CH <sub>3</sub> -S-CH <sub>3</sub>	Dimethyl Sulphide
CH <sub>3</sub> S-H	Methyl Mercaptan
CH <sub>3</sub> -S-S-CH <sub>3</sub>	Dimethyl Disulphide
CH <sub>4</sub>	Methane
CO	Carbon Monoxide
CO <sub>2</sub>	Carbon Dioxide
FPM	Fine Particulate Matter
H <sub>2</sub> S	Hydrogen Sulphide
H <sub>2</sub> SO <sub>3</sub>	Sulphurous Acid
H <sub>2</sub> SO <sub>4</sub>	Sulphuric Acid
NO	Nitric Oxide
NO <sub>2</sub>	Nitrogen Dioxide
NO <sub>x</sub>	Oxides of Nitrogen
O <sub>3</sub>	Ozone
PM <sub>10</sub>	Particulates with an aerodynamic diameter of less than 10 µm
PM <sub>2.5</sub>	Particulates with an aerodynamic diameter of less than 2.5 µm
SO <sub>2</sub>	Sulphur Dioxide
SO <sub>3</sub>	Sulphur Trioxide
TRS	Total Reduced Sulphur
TSP	Total Suspended Particulates
TVOCs	Total Volatile Organic Compounds

List of Abbreviations and Terms	
Countries	
EU	European Union
RSA	Republic of South Africa
UK	United Kingdom
US	United States

List of Abbreviations and Terms	
Direction	
N	North
NNE	North-North-East
NE	North-East
ENE	East-North-East
E	East
ESE	East-South-East
SE	South-East
SSE	South-South-East
S	South
SSW	South-South-West
SW	South-West
WSW	West-South-West
W	West
WNW	West-North-West
NW	North-West
NNW	North-North-West

List of Abbreviations and Terms	
Measurement	
°	Degrees
°C	Degrees Celsius
µg	Microgram
µg/m <sup>3</sup>	Micrograms per cubic meter
BMC	Best Measurement Capabilities
g/s	Grams per second
K	Kelvin
km	Kilometre
km/h	Kilometres per hour
m	Metres
m/s	Metres per second
mg	Milligrams
mg/m <sup>2</sup> /day	Milligrams per meter squared per day
mg/m <sup>3</sup>	Milligrams per cubic meter
ppb	Parts per billion
ppm	Parts per million
t/day	Tons per day
t/hr	Tons per hour
tpa	Tons per annum

List of Abbreviations and Terms	
Organisations	
AIMS	Air Impact Measurement Specialists
CASCO	Conformity Assessment Committee
DEFF	Department of Environment, Forestry and Fisheries
EA-NPI	Environment Australia - National Pollutant Inventory
EC	European Commission
EU-EA	European Union - Environmental Agency
IEC	International Electrotechnical Commission
IFC	International Finance Corporation
ISO	International Standard Organisation
RBCAA	Richards Bay Clean Air Association
SANAS	South African National Accreditation System
SANS	South African National Standard
UK-EA	United Kingdom - Environmental Agency
US-EPA	United States - Environmental Protection Agency
WHO	World Health Organisation

List of Abbreviations and Terms	
Terms	
Analyser	A mechanical-electrical-optical device used to measure the concentration of trace gas pollutants or particulate concentrations.
Calibration	Calibration is a procedure that compares sensor responses to known standards or reference values. Deviations between the expected and known concentrations are corrected and reported.
Database	The data structures and attendant software that organise, store, and allow users access to data.
Environment	The organisation's surroundings include air, water, land, natural resources, flora, fauna, humans, and their interactions and relations.
Meteorological Station	A monitoring station capable of monitoring wind speed, direction, and temperature.
Model	The model implements dispersion modelling mathematics software that calculates ambient pollution concentrations based on emission figures and meteorological data.
Network	The network comprises hardware (sensors, data loggers, telemetry, and computers) and software (data handling, storage programs, models, and databases).
Precision Check	The precision check is a procedure in which a sensor is challenged with a gas of known concentration within the operating range of the measurement.
Source	A point, line, or area from which pollution would be released
Station	A station is a data capture point used for measuring pollutants, meteorological conditions, or consolidating data.
System	The system represents all network components, including the procedures for marshalling and reporting data.

## APPENDIX B QUALITY ASSURANCE

The SO<sub>2</sub> concentrations reported are determined by the United States Environmental Protection Agency (US EPA) equivalent method, EQSA-0193-092. SO<sub>2</sub> and TRS measurements allow a maximum precision error of 10% of the reported value. A tolerance around the zero-point of plus or minus 5 ppb is permitted. Every effort is made to minimise the error. The minimum threshold for statistical analyses is at least 80% valid data to maintain reliability and minimise bias; the South African National Accreditation Standard requires 90%. (SANAS, 2012)

*Table 1: Quality Assurance*

Test	Range	Action
Zero	Zero 0 to 2 ppb	Leave it as is.
	Zero value -2 to 0 ppb	Set to zero.
	Zero value -5 to -2 ppb and 2 to 5 ppb	Adjust the data set to reset all data to zero.
	Zero value outside the above limits, invalidate and recalibrate.	Data can be adjusted if a specific reason for the deviation can be identified.
Span	Span value plus or minus a 3% deviation.	Leave it as is.
	Span value -10 to -3% and 3 to 10% deviation.	Scale the data set by the opposite, corresponding percentage.
	Span value outside the above limits, invalidate and recalibrate.	Data can be adjusted if a specific reason for the deviation can be identified.

**APPENDIX C**  
**EMISSION INVENTORY**

Table 1: Emission Inventory – 2025.

Industry	Description	SO <sub>2</sub> Emission 2025 (t)	SO <sub>2</sub> Emission 2025 (t)	SO <sub>2</sub> Contribution (%)
Foskor	Acid Plant	2390	2401	13%
	Boiler	11		
Tongaat Hulett	Boiler	185	185	1%
Mondi	Flume 1	1417	3080	17%
	Flume 2	836		
	Power Boiler	795		
	Incinerator	8		
	Bleach Plant	24		
Mpact	Babcock	281	805	5%
	JT Boiler	524		
	Oil Burner	0		
RBM	Char Plant	468	542	3%
	Miscellaneous	34		
	MSP (Drier)	38		
	Smokers	1		
South32	FTC	1885	10561	59%
	GTC 1	1955		
	GTC 2	1680		
	GTC 3	1579		
	GTC 4	1579		
	GTC 5	1630		
	Potrooms	254		
Tronox	Tank 1	251	251	1%
Total		17825	17825	100%

Note: Tongaat Hullet shut down during the year's 1st quarter and last month.

**APPENDIX D**  
**OPERATIONAL REPORT**Table 1: Maximum concentrations for PM<sub>10</sub> and PM<sub>2.5</sub>.

RBCAA: Monthly Report						
PM <sub>10</sub> daily averages						
Station	Concentration ( $\mu\text{g}/\text{m}^3$ )	% of the RSA Standard (75 $\mu\text{g}/\text{m}^3$ )	% of WHO Guideline (45 $\mu\text{g}/\text{m}^3$ )	Time	Wind Direction (°)	Wind Speed (m/s)
CBD ES1	33.0	44%	73%	2025/11/01 00:00	4.3	235
eSikhaleni	45.0	60%	100%	2025/11/15 00:00	5.2	233
Felixton ES1	30.0	40%	67%	2025/11/12 00:00	2.0	214
Richardia	59.0	79%	131%	2025/11/15 00:00	5.3	235
Scorpio ES1	33.0	44%	73%	2025/11/01 00:00	4.6	227
PM <sub>2.5</sub> daily averages						
Station	Concentration ( $\mu\text{g}/\text{m}^3$ )	% of the RSA Standard (40 $\mu\text{g}/\text{m}^3$ )	% of WHO Guideline (15 $\mu\text{g}/\text{m}^3$ )	Time	Wind Direction (°)	Wind Speed (m/s)
Brackenham ES2	30.0	75%	200%	2025/11/13 00:00	4.9	237
Felixton ES2	28.0	70%	187%	2025/11/12 00:00	2.0	214
Harbour West ES2	18.0	45%	120%	2025/11/12 00:00	2.2	190
Scorpio ES2	26.0	65%	173%	2025/11/12 00:00	2.2	190
<b>LEGEND</b>						
Yellow: = 50% of the guideline/standard						
Red: >= 100% of the guideline/standard (i.e. exceedance)						
Turquoise: = 10% of the guideline/standard						
<b>NOTES</b>						
Dates used for time intervals are the time beginning.						
Wind speeds of < 1 m/s are considered calm; wind directions measured under these conditions cannot be used for incident investigations.						
This report is an interim report regarding AIMS' quality system classification. The final data will be published in the system's monthly report.						
<b>STATUS</b>						
Meteorology						
Airport, Arboretum, Brackenham, CBD, eSikhaleni, and Harbour West have meteorology.						
Scorpio uses meteorology from Harbour West, and Felixton uses meteorology from eSikhaleni.						
<b>MISSING DATA</b>						
"Data < 80%" - data capture less than 80% (not suitable for statistical analysis)						
"No Data" – no data available.						

Table 2: Maximum concentrations for SO<sub>2</sub>.

RBCAA: Monthly Report						
SO <sub>2</sub> 10-minute averages						
Station	Concentration (ppb)	% of RSA Standard & WHO Guideline (500 µg/m <sup>3</sup> / 191 ppb)		Time	Wind Direction (°)	Wind Speed (m/s)
Arboretum	193.4	101%		2025/11/25 18:10	1.6	222
Brackenham	70.1	37%		2025/11/25 16:30	2.2	238
CBD	10.2	5%		2025/11/21 10:50	4.3	126
eSikhaleni	6.9	4%		2025/11/19 02:40	0.5	279
Felixton	34.7	18%		2025/11/14 04:40	2.4	195
Harbour West	95.1	50%		2025/11/29 05:20	4.5	6
Richardia	788.9	413%		2025/11/25 18:20	1.2	249
Scorpio	306.6	161%		2025/11/25 12:30	3.2	147
SO <sub>2</sub> hourly averages						
Station	Concentration (ppb)	% of the RSA Standard (350 µg/m <sup>3</sup> / 134 ppb)	No WHO Guideline	Time	Wind Direction (°)	Wind Speed (m/s)
Arboretum	73.3	55%	-	2025/11/25 18:00	1.3	242
Brackenham	29.6	22%	-	2025/11/25 16:00	2.4	226
CBD	9.0	7%	-	2025/11/21 11:00	4.0	121
eSikhaleni	4.0	3%	-	2025/11/23 15:00	3.8	89
Felixton	26.8	20%	-	2025/11/14 04:00	2.4	190
Harbour West	70.0	52%	-	2025/11/01 01:00	6.4	12
Richardia	500.7	374%	-	2025/11/25 18:00	1.3	242
Scorpio	142.6	106%	-	2025/11/27 02:00	0.6	316
SO <sub>2</sub> daily averages						
Station	Concentration (ppb)	% of the RSA Standard (125 µg/m <sup>3</sup> / 48 ppb)	% of WHO Guideline (40 µg/m <sup>3</sup> / 15 ppb)	Time	Wind Direction (°)	Wind Speed (m/s)
Arboretum	6.8	14%	45%	2025/11/25 00:00	2.6	227
Brackenham	4.5	9%	30%	2025/11/13 00:00	4.9	237
CBD	2.4	5%	16%	2025/11/21 00:00	1.9	-
eSikhaleni	2.7	6%	18%	2025/11/19 00:00	1.9	228
Felixton	4.1	9%	27%	2025/11/14 00:00	4.4	104
Harbour West	16.8	35%	112%	2025/11/29 00:00	5.1	39
Richardia	33.9	71%	226%	2025/11/25 00:00	2.6	227
Scorpio	41.9	87%	279%	2025/11/29 00:00	5.1	39

Table 3: Maximum concentrations for TRS.

**RBCAA: Monthly Report**

TRS 10-minute averages

Station	Concentration (ppb)	No RSA Standard	% of OME TRS Guideline (13.0 µg/m³ / 9.3 ppb)	Time	Wind Direction (°)	Wind Speed (m/s)
CBD	3.3	-	35%	2025/11/24 07:40	4.2	239
eSikhaleni	8.2	-	88%	2025/11/20 04:50	0.7	30
Felixton	40.6	-	437%	2025/11/20 00:50	1.5	233
Richardia	17.2	-	185%	2025/11/18 00:20	-	-

TRS 30-minute averages

Station	Concentration (ppb)	No RSA Standard	% of WHO H <sub>2</sub> S Guideline (7.0 µg/m³ / 5.0 ppb)	Time	Wind Direction (°)	Wind Speed (m/s)
CBD	2.7	-	54%	2025/11/24 07:30	4.4	241
eSikhaleni	6.6	-	132%	2025/11/20 05:00	0.3	16
Felixton	16.4	-	328%	2025/11/20 00:30	1.4	217
Richardia	9.8	-	196%	2025/11/18 00:00	0.9	284

TRS daily averages

Station	Concentration (ppb)	No RSA Standard	% of OME TRS Guideline (14.0 µg/m³ / 10.1 ppb)	Time	Wind Direction (°)	Wind Speed (m/s)
CBD	0.8	-	8%	2025/11/24 00:00	4.2	226
eSikhaleni	1.7	-	17%	2025/11/14 00:00	4.3	109
Felixton	1.9	-	19%	2025/11/20 00:00	2.3	142
Richardia	1.3	-	13%	2025/11/21 00:00	2.6	97

**APPENDIX E**  
**RAINFALL**

Table 1: Daily Rainfall

Date	Richards Bay (mm)	Felixton (mm)	RBCT (mm)	South32 (mm)
2025/11/01	4	2	7	2
2025/11/02	8	4	5	2
2025/11/03	0	0	0	0
2025/11/04	0	0	0	0
2025/11/05	3	0	0	0
2025/11/06	0	3	0	0
2025/11/07	6	0	4	0
2025/11/08	0	0	0	0
2025/11/09	0	0	0	0
2025/11/10	1	0	0	0
2025/11/11	0	0	0	0
2025/11/12	0	0	0	0
2025/11/13	0	0	0	0
2025/11/14	0	0	0	0
2025/11/15	21	32	28	16
2025/11/16	52	21	20	30
2025/11/17	10	1	2	4
2025/11/18	21	10	15	18
2025/11/19	0	0	0	0
2025/11/20	0	0	0	0
2025/11/21	0	0	0	0
2025/11/22	0	0	0	0
2025/11/23	15	40	40	21
2025/11/24	18	6	17	9
2025/11/25	3	3	0	2
2025/11/26	0	0	0	0
2025/11/27	0	0	0	0
2025/11/28	1	0	0	1
2025/11/29	3	12	27	5
2025/11/30	11	0	0	0
Total	176	131	166	112

Table 2: Monthly Rainfall, Richards Bay

Month	Richards Bay							
	2018	2019	2020	2021	2022	2023	2024	2025
Jan	94	182	47	305	127	167	271	371
Feb	232	195	377	229	193	410	118	390
Mar	139	78	139	217	62	141	192	165
Apr	261	214	141	96	647	87	101	479
May	311	9	53	165	130	356	22	41
Jun	70	78	114	140	60	33	89	27
Jul	20	16	48	57	20	196	57	220
Aug	100	160	107	59	77	20	97	17
Sep	85	43	144	216	93	23	186	203
Oct	213	260	171	214	101	345	250	96
Nov	119	296	122	72	131	61	103	176
Dec	156	320	77	464	253	195	145	
<b>Minimum</b>	20	9	47	57	20	20	22	17
<b>Average</b>	150	154	128	186	158	169	136	199
<b>Maximum</b>	311	320	377	464	647	410	271	479
<b>Total</b>	1798	1850	1540	2234	1893	2034	1630	2185

Table 3: Monthly Felixton

Month	Felixton							
	2018	2019	2020	2021	2022	2023	2024	225
Jan	43	138	71	207	68	57	146	117
Feb	129	138	214	231	78	188	82	303
Mar	89	70	89	126	95	80	113	148
Apr	138	143	106	135	368	58	49	287
May	342	9	42	57	120	245	17	16
Jun	60	53	44	98	20	14	53	29
Jul	22	17	37	39	15	146	2.5	157
Aug	83	39	67	55	37	18	54	3
Sep	53	79	84	191	51	43	137	127
Oct	201	144	67	145	98	318	187	79
Nov	84	121	106	35	174	34	78	131
Dec	111	311	64	212	163	146	74	
<b>Minimum</b>	22	9	37	35	15	14	3	3
<b>Average</b>	113	105	82	127	107	112	83	127
<b>Maximum</b>	342	311	214	231	368	318	187	303
<b>Total</b>	1354	1261	987	1530	1288	1347	992	1397

Table 4: RBCT

Month	RBCT							
	2018	2019	2020	2021	2022	2023	2024	2025
Jan	42	110	33	215	54	136	154	229
Feb	137	124	166	146	131	344	72	249
Mar	78	172	109	194	161	69	161	145
Apr	161	174	111	69	642	30	98	450
May	175	14	69	171	268	442	23	66
Jun	59	24	52	124	30	34	104	27
Jul	21	5	39	64	30	162	56	155
Aug	35	68	64	56	25	30	86	17
Sep	41	59	104	187	115	30	177	164
Oct	80	164	121	156	71	293	121	65
Nov	70	186	77	43	129	42	89	166
Dec	104	216	104	245	279	127	65	
<b>Minimum</b>	21	5	33	43	25	30	23	17
<b>Average</b>	84	110	87	139	161	145	100	158
<b>Maximum</b>	175	216	166	245	642	442	177	450
<b>Total</b>	1005	1317	1049	1669	1934	1740	1205	1733

Table 5: South32

Month	South32 (mm)							
	2018	2019	2020	2021	2022	2023	2024	2025
Jan	-	-	-	-	-	91	120	232
Feb	-	-	-	-	115	256	-	241
Mar	-	-	-	-	149	51	144	137
Apr	-	-	-	-	505	43	-	363
May	-	-	-	-	106	230	-	23
Jun	-	-	-	-	25	11	-	16
Jul	-	-	-	-	12	165	-	98
Aug	-	-	-	-	30	13	-	8
Sep	-	-	-	-	64	18	129	35
Oct	-	-	-	-	64	271	-	30
Nov	-	-	-	-	101	36	-	112
Dec	-	-	-	-	163	95	92	
<b>Minimum</b>	-	-	-	-	12	11	92	8
<b>Average</b>	-	-	-	-	121	107	121	118
<b>Maximum</b>	-	-	-	-	505	271	144	363
<b>Total</b>	-	-	-	-	1336	1280	485	1295

Please note that the South32 missing rain data for 2024 was due to a faulty rain gauge.

## APPENDIX F COMPLAINTS LOG

Table 1: Complaints

No	Date	Region	Type	Source	Description	Response
1	2025/11/18 19:30	Arboretum Ext	Sewage odour	CoU	Tue 18 Nov @19h30, Thurs 20 Nov @18h00 and Fri 21 Nov @22h14, "The sewage smell is so bad that my house stinks inside. My visitors left because the smell was so bad."	325
2	2025/11/21 07:40	Arboretum Ext	Alumina fallout	South32	"White powder on car. Was washed last night."	334
3	2025/11/21 08:30	Veldenvlei	Alumina fallout	South32	"Alumina fallout on vehicle."	334
4	2025/11/21 22:04	Arboretum Ext	Sewage odour + clinical	CoU	"Unbearable sewage odour, affecting my asthmatic children."	325
5	2025/11/25 16:20	Richards Bay	Sulphur Odour & Smoke	Grindrod	"Pungent sulphur smell and white smoke over Foskor towards CBD"	333
6	2025/11/25 16:29	Richards Bay	Sulphur Odour & Smoke	Grindrod	"Bad acidic smell and smoke haze."	333
7	2025/11/25 19:15	Arboretum	Sulphur Odour + clinical	Grindrod	"Sulphur Smell causing throat and chest discomfort"	333
8	2025/11/25 19:58	Arboretum	Sulphur Odour	Grindrod	Bad sulphur type smell.	333
9	2025/11/27 07:51	Arboretum	Sewage odour	CoU	"Really bad sewage smell"	325
10	2025/11/27 07:51	Arboretum	Sewage odour	CoU	"Really bad sewage smell"	325
11	2025/11/27 07:51	Arboretum	Sewage odour	CoU	"Really bad sewage smell"	325
12	2025/11/27 07:51	Arboretum	Sewage odour	CoU	"Really bad sewage smell"	325
13	2025/11/28 07:36	Arboretum Ext	Sewage odour	CoU	"Sewage stench"	325
14	2025/11/28 08:40	Veldenvlei	Alumina fallout	South32	"Alumina fallout on vehicle after being washed following previous incident"	334
15	2025/11/29 18:11	Arboretum Ext	Sewage odour	CoU	"Terrible sewage smell"	325
16	2025/11/29 20:47	Arboretum Ext	Sewage odour	CoU	"Sewage smells terrible"	325

Table 2: Responses

No.	Industry Feedback
325	<p>"Department of Water and Sanitation – KZN- Ziyanda Malibiji responded (2025/09/29 16:22): The Department of Water and Sanitation is still awaiting the City’s response on this matter. The overflow of untreated effluent from the sewer reticulation infrastructure pollutes or poses a threat to surface and underground water resources within the vicinity. Your attention is drawn to Section 19 of the National Water Act, 1998 (Act No.36 of 1998) which states:                      “(1) An owner of land, a person in control of land or a person who occupies or uses the land on which-                      (a) any activity or process is or was performed or undertaken; or                      (b) any other situation exists, which causes, has caused or is likely to cause pollution of a water resource, must take all reasonable measures to prevent any such pollution from occurring, continuing or recurring.”                      As such, the responsibility rests with the City of uMhlatuze Local Municipality to identify the source of pollution from its undertaking and to take appropriate measures to prevent pollution of the environment and water resources. Failure to comply with the requirements of the National Water Act, 1998 (Act No. 36 of 1998) could lead to legal action being instituted against the municipality.                      This Department wishes to make it clear that the instructions contained in my email dated 19 September 2025 are made in the interest of responsible water resource management and with a view to co-operative resolution of the issue. Looking forward to your response in this regard.</p> <p>CoU-DWS -Jackie Lourens responded (2025/09/29 16:22): Investigation and findings: The Electro-Mechanical maintenance team has conducted the investigation at the pump station for possible fault and diagnose the possible cause/s. The pump station is currently not operational, there is sewerage inside the pump station yard and the manhole at the entrance to the pump station is overflowing. Both pumps failed after the power supply interruption around the area. The following possibilities, that lead to pump failure, were not ruled out as part of the brainstorming methodology:                      - Sludge build up inside the pump station sump,                      - Type of pump installation used                      o Life span of the pumps version flygt 3300, new version flygt 3301                      o MCC Panel condition,                      o Motor protection,                      - Overcurrent and inrush current in power supplies                      - Foreign and heavy objects entering into the sewerage system,                      - Load shedding by Eskom                      NOTE: Full report available</p> <p>RBCAA Allocation- Sandy Camminga (2025/12/02 15:30) "</p>
333	<p>RBCAA - Sandy Camminga (2025/12/01 07:59): The above complaints are attributed to a fire at the Grindrod Valley Terminal sulphur store, which also resulted in extremely high SO2 levels being recorded at the RBCAA Richardia Station.                       We await the investigation report from Grindrod.</p>
334	<p>RBCAA Allocation- Sandy Camminga (2025/12/02 15:30)</p>

## APPENDIX G PM<sub>10</sub> EXCEEDANCE LOG

Table 1: PM<sub>10</sub> exceedances.

No	Target / Guideline / Standard	Station	Date	Value (ppb)	Wind Direction (°)	Wind Speed (m/s)	Source	Comment	Response
1	PM <sub>10</sub> Daily WHO Limit (45 µg/m <sup>3</sup> )	Richardia	2025/11/15 0:00	59.0	235	5.4	No response required	None	2

Table 2: PM<sub>10</sub> responses.

Response	Industry Feedback
2	No response required

## APPENDIX H

### PM<sub>2.5</sub> EXCEEDANCE LOG

Table 1: PM<sub>2.5</sub> Exceedances

No	Target / Guideline / Standard	Station	Date	Value (ppb)	Wind Direction (°)	Wind Speed (m/s)	Source	Comment	Response
1	PM <sub>2.5</sub> Daily WHO Limit (15 µg/m <sup>3</sup> )	Brackenheim	2025/11/01 00:00	27.0	254	4.5	No response required	None	2
2	PM <sub>2.5</sub> Daily WHO Limit (15 µg/m <sup>3</sup> )	Brackenheim	2025/11/04 00:00	22.0	25	4.9	No response required	None	2
3	PM <sub>2.5</sub> Daily WHO Limit (15 µg/m <sup>3</sup> )	Brackenheim	2025/11/05 00:00	18.0	224	4.5	No response required	None	2
4	PM <sub>2.5</sub> Daily WHO Limit (15 µg/m <sup>3</sup> )	Brackenheim	2025/11/12 00:00	29.0	210	2	No response required	None	2
5	PM <sub>2.5</sub> Daily WHO Limit (15 µg/m <sup>3</sup> )	Brackenheim	2025/11/13 00:00	30.0	238	4.9	No response required	None	2
6	PM <sub>2.5</sub> Daily WHO Limit (15 µg/m <sup>3</sup> )	Brackenheim	2025/11/15 00:00	30.0	257	5.7	No response required	None	2
7	PM <sub>2.5</sub> Daily WHO Limit (15 µg/m <sup>3</sup> )	Brackenheim	2025/11/23 00:00	16.0	46	3.8	No response required	None	2
8	PM <sub>2.5</sub> Daily WHO Limit (15 µg/m <sup>3</sup> )	Brackenheim	2025/11/27 00:00	26.0	253	3.8	No response required	None	2
9	PM <sub>2.5</sub> Daily WHO Limit (15 µg/m <sup>3</sup> )	Brackenheim	2025/11/28 00:00	17.0	27	2.2	No response required	None	2
10	PM <sub>2.5</sub> Daily WHO Limit (15 µg/m <sup>3</sup> )	Brackenheim	2025/11/30 00:00	20.0	237	5.2	No response required	None	2
11	PM <sub>2.5</sub> Daily WHO Limit (15 µg/m <sup>3</sup> )	Felixton	2025/11/01 00:00	20.0	235	3.8	No response required	None	2
12	PM <sub>2.5</sub> Daily WHO Limit (15 µg/m <sup>3</sup> )	Felixton	2025/11/04 00:00	16.0	36	5	No response required	None	2
13	PM <sub>2.5</sub> Daily WHO Limit (15 µg/m <sup>3</sup> )	Felixton	2025/11/05 00:00	19.0	223	3.5	No response required	None	2
14	PM <sub>2.5</sub> Daily WHO Limit (15 µg/m <sup>3</sup> )	Felixton	2025/11/12 00:00	28.0	213	2	No response required	None	2
15	PM <sub>2.5</sub> Daily WHO Limit (15 µg/m <sup>3</sup> )	Felixton	2025/11/13 00:00	25.0	220	3.8	No response required	None	2
16	PM <sub>2.5</sub> Daily WHO Limit (15 µg/m <sup>3</sup> )	Felixton	2025/11/15 00:00	21.0	229	4.9	No response required	None	2
17	PM <sub>2.5</sub> Daily WHO Limit (15 µg/m <sup>3</sup> )	Felixton	2025/11/27 00:00	22.0	223	3.5	No response required	None	2
18	PM <sub>2.5</sub> Daily WHO Limit (15 µg/m <sup>3</sup> )	Felixton	2025/11/30 00:00	18.0	234	4.1	No response required	None	2
19	PM <sub>2.5</sub> Daily WHO Limit (15 µg/m <sup>3</sup> )	Harbour West	2025/11/12 00:00	18.0	190	2.2	No response required	None	2
20	PM <sub>2.5</sub> Daily WHO Limit (15 µg/m <sup>3</sup> )	Scorpio	2025/11/01 00:00	22.0	228	4.6	No response required	None	2
21	PM <sub>2.5</sub> Daily WHO Limit (15 µg/m <sup>3</sup> )	Scorpio	2025/11/05 00:00	18.0	199	4	No response required	None	2
22	PM <sub>2.5</sub> Daily WHO Limit (15 µg/m <sup>3</sup> )	Scorpio	2025/11/09 00:00	16.0	53	3.6	No response required	None	2
23	PM <sub>2.5</sub> Daily WHO Limit (15 µg/m <sup>3</sup> )	Scorpio	2025/11/12 00:00	26.0	190	2.2	No response required	None	2
24	PM <sub>2.5</sub> Daily WHO Limit (15 µg/m <sup>3</sup> )	Scorpio	2025/11/13 00:00	22.0	202	4.2	No response required	None	2
25	PM <sub>2.5</sub> Daily WHO Limit (15 µg/m <sup>3</sup> )	Scorpio	2025/11/14 00:00	20.0	99	4.5	No response required	None	2
26	PM <sub>2.5</sub> Daily WHO Limit (15 µg/m <sup>3</sup> )	Scorpio	2025/11/15 00:00	21.0	221	5.3	No response required	None	2
27	PM <sub>2.5</sub> Daily WHO Limit (15 µg/m <sup>3</sup> )	Scorpio	2025/11/27 00:00	21.0	222	3.6	No response required	None	2
28	PM <sub>2.5</sub> Daily WHO Limit (15 µg/m <sup>3</sup> )	Scorpio	2025/11/29 00:00	18.0	38	5.1	No response required	None	2

*Table 2: PM<sub>2.5</sub> Responses*

Response	Industry Feedback
2	No response required

## APPENDIX I SO<sub>2</sub> EXCEEDANCE LOG

Table 1: SO<sub>2</sub> Exceedances.

No	Target / Guideline / Standard	Station	Date	Value (ppb)	Wind Direction (°)	Wind Speed (m/s)	Source	Comment	Response
1	SO <sub>2</sub> 10-minute RSA & WHO Limit (191 ppb)	Arboretum	2025/11/25 18:10	193.4	222	1.6	Grindrod	Fire at Sulphur store - Incident Report pending	178, 179, 1
2	SO <sub>2</sub> Daily WHO Limit (15 ppb)	Harbour West	2025/11/29 00:00	16.8	38	5.1	No response required	None	2
3	SO <sub>2</sub> Daily WHO Limit (15 ppb)	Richardia	2025/11/25 00:00	33.9	226	2.6	Grindrod	Fire at Sulphur store - Incident Report pending	178, 179, 1
4	SO <sub>2</sub> Hourly RSA Limit (134 ppb)	Richardia	2025/11/25 18:00	500.7	242	1.3	Grindrod	Fire at Sulphur store - Incident Report pending	178, 179, 1
5	SO <sub>2</sub> 10-minute RSA & WHO Limit (191 ppb)	Richardia	2025/11/25 18:10	518.3	222	1.6	Grindrod	Fire at Sulphur store - Incident Report pending	178, 179, 1
6	SO <sub>2</sub> 10-minute RSA & WHO Limit (191 ppb)	Richardia	2025/11/25 18:20	788.9	249	1.2	Grindrod	Fire at Sulphur store - Incident Report pending	178, 179, 1
7	SO <sub>2</sub> 10-minute RSA & WHO Limit (191 ppb)	Richardia	2025/11/25 18:30	647.9	244	1.2	Grindrod	Fire at Sulphur store - Incident Report pending	178, 179, 1
8	SO <sub>2</sub> 10-minute RSA & WHO Limit (191 ppb)	Richardia	2025/11/25 18:40	657.4	-	0.3	Grindrod	Fire at Sulphur store - Incident Report pending	178, 179, 1
9	SO <sub>2</sub> 10-minute RSA & WHO Limit (191 ppb)	Richardia	2025/11/25 18:50	374.3	266	1.3	Grindrod	Fire at Sulphur store - Incident Report pending	178, 179, 1
10	SO <sub>2</sub> Hourly RSA Limit (134 ppb)	Richardia	2025/11/25 19:00	246.6	255	1.1	Grindrod	Fire at Sulphur store - Incident Report pending	178, 179, 1
11	SO <sub>2</sub> 10-minute RSA & WHO Limit (191 ppb)	Richardia	2025/11/25 19:20	220.3	258	1.1	Grindrod	Fire at Sulphur store - Incident Report pending	178, 179, 1

No	Target / Guideline / Standard	Station	Date	Value (ppb)	Wind Direction (°)	Wind Speed (m/s)	Source	Comment	Response
12	SO <sub>2</sub> 10-minute RSA & WHO Limit (191 ppb)	Richardia	2025/11/25 19:30	760.6	220	1.1	Grindrod	Fire at Sulphur store - Incident Report pending	178, 179, 1
13	SO <sub>2</sub> 10-minute RSA & WHO Limit (191 ppb)	Richardia	2025/11/25 19:40	317.6	248	1.5	Grindrod	Fire at Sulphur store - Incident Report pending	178, 179, 1
14	SO <sub>2</sub> Daily WHO Limit (15 ppb)	Scorpio	2025/11/01 00:00	17.0	228	4.6	No response required	None	2
15	SO <sub>2</sub> Daily WHO Limit (15 ppb)	Scorpio	2025/11/15 00:00	15.1	221	5.3	No response required	None	2
16	SO <sub>2</sub> Daily WHO Limit (15 ppb)	Scorpio	2025/11/23 00:00	22.7	35	4.3	No response required	None	2
17	SO <sub>2</sub> 10-minute RSA & WHO Limit (191 ppb)	Scorpio	2025/11/25 12:30	306.6	147	3.2	Grindrod	Fire at Sulphur store - Incident Report pending	178, 179, 1
18	SO <sub>2</sub> 10-minute RSA & WHO Limit (191 ppb)	Scorpio	2025/11/25 12:40	204.3	140	3.4	Grindrod	Fire at Sulphur store - Incident Report pending	178, 179, 1
19	SO <sub>2</sub> 10-minute RSA & WHO Limit (191 ppb)	Scorpio	2025/11/25 16:10	293.6	177	2	Grindrod	Fire at Sulphur store - Incident Report pending	178, 179, 1
20	SO <sub>2</sub> Daily WHO Limit (15 ppb)	Scorpio	2025/11/26 00:00	31.6	20	2.7	No response required	None	2
21	SO <sub>2</sub> Hourly RSA Limit (134 ppb)	Scorpio	2025/11/26 22:00	138.3	8	1.2	Foskor	RBCAA Allocation	180, 183, 1
22	SO <sub>2</sub> Hourly RSA Limit (134 ppb)	Scorpio	2025/11/26 23:00	134.1	332	0.9	Foskor	RBCAA Allocation	180, 183, 1
23	SO <sub>2</sub> Daily WHO Limit (15 ppb)	Scorpio	2025/11/27 00:00	15.1	222	3.6	No response required	None	2
24	SO <sub>2</sub> Hourly RSA Limit (134 ppb)	Scorpio	2025/11/27 02:00	142.6	316	0.6	Foskor	RBCAA Allocation	181, 183, 1
25	SO <sub>2</sub> 10-minute RSA & WHO Limit (191 ppb)	Scorpio	2025/11/27 02:20	225.5	332	0.1	Foskor	RBCAA Allocation	181, 183, 1
26	SO <sub>2</sub> Daily WHO Limit (15 ppb)	Scorpio	2025/11/29 00:00	41.9	38	5.1	No response required	None	2
27	SO <sub>2</sub> Hourly RSA Limit (134 ppb)	Scorpio	2025/11/29 03:00	136.3	3	4.2	South32	RBCAA Allocation	182, 184, 1

Table 2: SO<sub>2</sub> Responses.

Response	Industry Feedback
1	Unresolved / No Response
2	No response required / Allocated by wind direction
178	Grindrod - Sibahle Dladla responded (2025/11/25 18:49): Please note that at 15h50 a fire incident occurred at the Valley terminal resulting in smoke. The Valley terminal stores Sulphur. The local fire department was immediately notified of the incident. They have been onsite to ensure the situation is under control. An investigation will be done to determine the root cause of the incident. A detailed report will be shared upon investigation.
179	Mondi - Kira Cobbold responded, (2025/10/27 10:51): Mondi has investigated all SO2 exceedances on 25/11/25 and based on normal operating conditons of the power boilers, SO2 stack emissions within their compliance limits, and all other plants being offline due to AS2025, Mondi is unlikely the source.
180	Mondi - Kira Cobbold responded, (2025/10/27 13:51): Mondi has investigated the SO2 exceedance on 26/11/25 and based on wind direction, normal operating conditions of the power boilers, SO2 stack emissions within their compliance limits, and all other plants being offline due to AS2025, Mondi is unlikely the source.
181	Mondi - Kira Cobbold responded, (2025/10/28 13:41): Mondi has investigated the SO2 exceedances on 27/11/25 and based on wind direction, normal operating conditions of the power boilers, SO2 stack emissions within their compliance limits, and all other plants being offline due to AS2025, Mondi is unlikely the source.
182	Mondi - Kira Cobbold responded, (2025/12/01 10:09): Based on the north easterly wind direction and normal operating conditions of power boilers, Mondi is unlikely the source for the SO2 exceedance observed.
183	RBCAA Allocation - Sandy Camminga (2025/12/02 15:30): Calms
184	RBCAA Allocation - Sandy Camminga (2025/12/02 15:30): WD

## APPENDIX J

### TRS EXCEEDANCE LOG

Table 1: TRS Exceedances.

No	Target / Guideline / Standard	Station	Date	Value (ppb)	Wind Direction (°)	Wind Speed (m/s)	Source	Comment	Response
1	TRS 30-minute WHO H <sub>2</sub> S Limit (5.0 ppb)	eSikhaleni	2025/11/10 02:30	5.8	66	0.5	Local source	RBCAA Allocation	840, 841, <b>855</b>
2	TRS 30-minute WHO H <sub>2</sub> S Limit (5.0 ppb)	eSikhaleni	2025/11/20 05:00	6.6	16	0.3	Mondi	SETP	<b>844</b> , 845, 1
3	TRS 30-minute WHO H <sub>2</sub> S Limit (5.0 ppb)	Felixton	2025/11/03 05:30	15.5	173	1.1	THS - Mondi	Boilers-coal operated + Mondi SETP	836, <b>838</b> , <b>839</b>
4	TRS 10-minute OME Limit (9.3 ppb)	Felixton	2025/11/03 05:40	15.8	174	1.2	THS - Mondi	Boilers-coal operated + Mondi SETP	836, <b>838</b> , <b>839</b>
5	TRS 10-minute OME Limit (9.3 ppb)	Felixton	2025/11/03 05:50	29.0	175	0.7	THS - Mondi	Boilers-coal operated + Mondi SETP	836, <b>838</b> , <b>839</b>
6	TRS 10-minute OME Limit (9.3 ppb)	Felixton	2025/11/03 06:00	16.0	116	0.9	THS - Mondi	Boilers-coal operated + Mondi SETP	836, <b>838</b> , <b>839</b>
7	TRS 30-minute WHO H <sub>2</sub> S Limit (5.0 ppb)	Felixton	2025/11/03 06:00	11.5	91	1.0	THS - Mondi	Boilers-coal operated + Mondi SETP	836, <b>838</b> , <b>839</b>
8	TRS 10-minute OME Limit (9.3 ppb)	Felixton	2025/11/03 06:10	10.8	70	1.2	THS - Mondi	Boilers-coal operated + Mondi SETP	836, <b>838</b> , <b>839</b>
9	TRS 30-minute WHO H <sub>2</sub> S Limit (5.0 ppb)	Felixton	2025/11/20 00:30	16.4	217	1.4	THS - Mondi	Boilers-coal operated + Mondi SETP	<b>844</b> , 845, <b>847</b>
10	TRS 10-minute OME Limit (9.3 ppb)	Felixton	2025/11/20 00:50	40.6	233	1.5	THS - Mondi	Boilers-coal operated + Mondi SETP	<b>844</b> , 845, <b>847</b>
11	TRS 10-minute OME Limit (9.3 ppb)	Felixton	2025/11/20 01:00	34.1	227	1.6	THS - Mondi	Boilers-coal operated + Mondi SETP	<b>844</b> , 845, <b>847</b>
12	TRS 30-minute WHO H <sub>2</sub> S Limit (5.0 ppb)	Felixton	2025/11/20 01:00	15.1	212	1.4	THS - Mondi	Boilers-coal operated + Mondi SETP	<b>844</b> , 845, <b>847</b>
13	TRS 10-minute OME Limit (9.3 ppb)	Felixton	2025/11/20 01:10	10.2	218	1.4	THS - Mondi	Boilers-coal operated + Mondi SETP	<b>844</b> , 845, <b>847</b>
14	TRS 10-minute OME Limit (9.3 ppb)	Felixton	2025/11/20 20:20	9.7	164	0.4	THS - Mondi	Boilers-coal operated + Mondi SETP	<b>844</b> , 845, <b>847</b>
15	TRS 10-minute OME Limit (9.3 ppb)	Felixton	2025/11/20 20:30	12.0	220	0.7	THS - Mondi	Boilers-coal operated + Mondi SETP	<b>844</b> , 845, <b>847</b>
16	TRS 30-minute WHO H <sub>2</sub> S Limit (5.0 ppb)	Felixton	2025/11/20 20:30	14.0	200	0.6	THS - Mondi	Boilers-coal operated + Mondi SETP	<b>844</b> , 845, <b>847</b>
17	TRS 10-minute OME Limit (9.3 ppb)	Felixton	2025/11/20 20:40	16.8	205	0.6	THS - Mondi	Boilers-coal operated + Mondi SETP	<b>844</b> , 845, <b>847</b>
18	TRS 10-minute OME Limit (9.3 ppb)	Felixton	2025/11/20 20:50	13.2	165	0.5	THS - Mondi	Boilers-coal operated + Mondi SETP	<b>844</b> , 845, <b>847</b>
19	TRS 10-minute OME Limit (9.3 ppb)	Felixton	2025/11/24 01:00	11.3	220	1.4	THS	RBCAA Allocation	848, 850, 855
20	TRS 30-minute WHO H <sub>2</sub> S Limit (5.0 ppb)	Felixton	2025/11/24 01:00	7.5	224	2.2	THS	RBCAA Allocation	848, 850, 855
21	TRS 10-minute OME Limit (9.3 ppb)	Felixton	2025/11/25 15:00	9.5	170	1.8	THS	Boilers-coal operated	<b>849</b> , 851, 852
22	TRS 30-minute WHO H <sub>2</sub> S Limit (5.0 ppb)	Felixton	2025/11/25 15:00	7.9	182	2.0	THS	Boilers-coal operated	<b>849</b> , 851, 852
23	TRS 10-minute OME Limit (9.3 ppb)	Felixton	2025/11/27 01:50	9.5	186	0.9	Mondi	SETP	854, <b>855</b> , <b>858</b>
24	TRS 10-minute OME Limit (9.3 ppb)	Felixton	2025/11/27 04:00	11.7	240	1.5	Mondi	SETP	854, <b>855</b> , <b>858</b>
25	TRS 30-minute WHO H <sub>2</sub> S Limit (5.0 ppb)	Felixton	2025/11/27 04:00	7.6	213	0.0	Mondi	SETP	854, <b>855</b> , <b>858</b>
26	TRS 30-minute WHO H <sub>2</sub> S Limit (5.0 ppb)	Felixton	2025/11/29 18:30	6.0	185	2.8	THS	Boilers-coal operated	853, <b>859</b> , 857
27	TRS 30-minute WHO H <sub>2</sub> S Limit (5.0 ppb)	Felixton	2025/11/29 19:00	5.5	183	2.2	THS	Boilers-coal operated	853, <b>859</b> , 857
28	TRS 30-minute WHO H <sub>2</sub> S Limit (5.0 ppb)	Richardia	2025/11/18 00:00	9.8	284	0.9	CoU	Sewage discharge	843, 856
29	TRS 10-minute OME Limit (9.3 ppb)	Richardia	2025/11/18 00:10	11.5	278	1.1	CoU	Sewage discharge	843, 856
30	TRS 10-minute OME Limit (9.3 ppb)	Richardia	2025/11/18 00:20	17.2	No Data	0.2	CoU	Sewage discharge	843, 856

No	Target / Guideline / Standard	Station	Date	Value (ppb)	Wind Direction (°)	Wind Speed (m/s)	Source	Comment	Response
31	TRS 10-minute OME Limit (9.3 ppb)	Richardia	2025/11/18 20:10	9.5	215	0.2	CoU	Sewage discharge	843, 856
32	TRS 30-minute WHO H <sub>2</sub> S Limit (5.0 ppb)	Richardia	2025/11/20 02:30	8.5	No Data	0.5	CoU	Sewage discharge	844, 845, <b>856</b>
33	TRS 10-minute OME Limit (9.3 ppb)	Richardia	2025/11/20 02:40	14.4	No Data	0.7	CoU	Sewage discharge	844, 845, <b>856</b>
34	TRS 30-minute WHO H <sub>2</sub> S Limit (5.0 ppb)	Richardia	2025/11/21 21:30	5.5	-	0.2	Mondi	SETP	<b>846</b> , 1
35	TRS 10-minute OME Limit (9.3 ppb)	Richardia	2025/11/21 21:50	14.8	-	0.2	Mondi	SETP	<b>846</b> , 1
36	TRS 30-minute WHO H <sub>2</sub> S Limit (5.0 ppb)	Richardia	2025/11/21 23:00	8.6	206	1.1	Mondi	SETP	<b>846</b> , 1
37	TRS 10-minute OME Limit (9.3 ppb)	Richardia	2025/11/21 23:10	11.8	207	1.2	Mondi	SETP	<b>846</b> , 1
38	TRS 30-minute WHO H <sub>2</sub> S Limit (5.0 ppb)	Richardia	2025/11/27 03:30	7.4	329	0.9	CoU	Sewage discharge	<b>856</b> , 858, 1
39	TRS 10-minute OME Limit (9.3 ppb)	Richardia	2025/11/27 03:50	9.5	0	0.5	CoU	Sewage discharge	<b>856</b> , 858, 1
40	TRS 10-minute OME Limit (9.3 ppb)	Richardia	2025/11/27 04:00	15.2	0	0.0	CoU	Sewage discharge	<b>856</b> , 858, 1
41	TRS 30-minute WHO H <sub>2</sub> S Limit (5.0 ppb)	Richardia	2025/11/27 04:00	9.3	0	0.5	CoU	Sewage discharge	<b>856</b> , 858, 1

Table 2: TRS Responses

No	Industry Feedback
1	Unresolved / No Response
836	Mpact -Traven Chetty responded, (2025/11/05 14:46): Mpact has investigated these exceedances at the Felixton station on the 3rd of November 2025. Based on the plant process reports, all operation were stable with no abnormal activities taking place. To further this, the wind direction is also not in favour of emissions from Mpact. Based on this, it is unlikely that Mpact is the source of these exceedances.
837	Tongaat Hulett - Nicolas Govender responded (2025/11/07 09:34): Boilers experienced downtime on the bagasse scratcher on this day resulting in bagasse conveyors choking and coal was used to sustain fires in the boilers.
838	Tongaat Hulett - Nicolas Govender responded (2025/11/07 09:03): The boiler were burning coal as the factory was boiling off for steam stop and bagasse level was low during this period.
839	Mondi - Kira Cobbold responded, (2025/11/07 14:40): Mondi has investigated the exceedance at Felixton and based on wind direction and low wind speeds Mondi can be considered a potential source. The mill is currently undergoing its annual shutdown with the only plant running being the SETP. This indicates that the mostly likely source would be from TRS release at the SETP.
840	Mpact -Traven Chetty responded, (2025/11/13 07:07): Mpact has investigated the exceedance on the 10 of November 2025 at eSikhaleni station. All plant process reports indicate that operations were stable with no abnormal conditions experienced. Based on this, it is unlikely that Mpact is the source of the exceedance.
843	RBCAA Allocation -Sandy Camminga (2025/11/19 20:37): allocated to CoU Sewage Discharge, based on WS and the fact that Mondi is on an annual shut.
844	Mondi - Kira Cobbold responded, (2025/11/21 14:51): Mondi has investigated the TRS exceedances at Felixton and eSikhaleni on 20/11/2025 and based on wind direction and low wind speeds, Mondi can be considered a potential contributing source. The only odour generating plant running during this period was the SETP (all other plants offline due to annual shutdown) indicating the SETP as the only potential root cause.  For the exceedance at Richardia, the wind direction did not favour Mondi as the source with only the Mondi UVS station showing elevated TRS levels (all other Mondi stations remained on low levels indicating a wind direction away from Richardia station). This exceedance may rather be linked to the municipal sewage issues located nearby the station.
845	Mpact -Traven Chetty responded, (2025/11/24 13:08): Mpact has investigated these exceedances on the 20th of November 2025. We can confirm all plant process reports indicated that operations were stable and there were no abnormal conditions experienced. The wind direction is also not in favour of emissions from Mpact. Based on this, it is unlikely that Mpact is the source of these exceedances.
846	Mondi - Kira Cobbold responded, (2025/11/24 14:42): Mondi has investigated the exceedances at Richardia on 21/11/25 and based on wind direction and very low winds speeds Mondi can be considered a potential source. Mondi portable station showed elevated TRS levels from around 10pm which is typically an indicator of odour released from the SETP as they are situated in close proximity to one another. Additionally, the SETP was the only odour generating plant running during this period (all other plants offline due to annual shutdown) confirming the plant as a potential source.
847	Tongaat Hulett - Nicolas Govender responded (2025/11/25 09:51): The boilers experienced a failure on the bagasse scratcher which supplies fuel to the boiler and coal was burnt to sustain fires in boiler.
848	Mondi - Kira Cobbold responded, (2025/11/25 11:31): Mondi has investigated the TRS exceedance at Felixton on 24/11/25 and based on the south westerly wind direction is unlikely the source. <b>NOTE:</b> Please note that was an error on the body of the email and the response refers to the exceedance on the 24th of November.
849	Tongaat Hulett - Nicolas Govender responded (2025/11/26 12:35"& 12:36): "... allocate this exceedance to TH, this was due us starting up after the heavy rains. We did use coal to supplement the wet bagasse.
850	Mpact -Traven Chetty responded, (2025/11/26 12:59): Mpact has investigated this exceedance at Felixton station on the 24th of November 2025. All plant process reports indicate that operations were stable with no abnormal conditions experienced. It is also noted that the wind direction is not in favour of emissions from Mpact. Based on this, it is unlikely that Mpact is the source of this exceedance.
851	Mondi - Kira Cobbold responded, (2025/11/26 13:38): Mondi has investigated the TRS exceedance at Felixton on 25/11/25 and based on the southerly wind direction is unlikely the source.
852	Mpact -Traven Chetty responded, (2025/11/27 15:44): Mpact has investigated the exceedance at the Felixton station on the 25th of November 2025. Based on the plant process reports, all operation were stable with no abnormal activities taking place. To further this, the wind direction is also not in favour of emissions from Mpact. Based on this, it is unlikely that Mpact is the source of this exceedance.

No	Industry Feedback
853	Mondi - Kira Cobbold responded, (2025/12/01 10:14): Mondi has investigated the TRS exceedances at Felixton on 29/11/25 and based on the strong south westerly wind direction, Mondi is unlikely to be the source.
854	Mpact -Traven Chetty responded, (2025/12/01 15:47): Mpact has investigated this exceedance at Felixton station on the 27th of November 2025. All plant process reports indicate that operations were stable with no abnormal conditions experienced. Based on this, it is unlikely that Mpact is the source of this exceedance.
855	RBCAA Allocation - Sandy Camminga (2025/12/02 15:30)
856	<p>RBCAA Allocation - Sandy Camminga (2025/12/02 15:30): Authorities acknowledged the problem. Refer to: Department of Water and Sanitation – KZN- Ziyanda Malibiji responded (2025/09/29 16:22): The Department of Water and Sanitation is still awaiting the City's response on this matter. The overflow of untreated effluent from the sewer reticulation infrastructure pollutes or poses a threat to surface and underground water resources within the vicinity. Your attention is drawn to Section 19 of the National Water Act, 1998 (Act No.36 of 1998) which states: “(1) An owner of land, a person in control of land or a person who occupies or uses the land on which- (a) any activity or process is or was performed or undertaken; or (b) any other situation exists, which causes, has caused or is likely to cause pollution of a water resource, must take all reasonable measures to prevent any such pollution from occurring, continuing or recurring.” As such, the responsibility rests with the City of uMhlathuze Local Municipality to identify the source of pollution from its undertaking and to take appropriate measures to prevent pollution of the environment and water resources. Failure to comply with the requirements of the National Water Act, 1998 (Act No. 36 of 1998) could lead to legal action being instituted against the municipality. This Department wishes to make it clear that the instructions contained in my email dated 19 September 2025 are made in the interest of responsible water resource management and with a view to co-operative resolution of the issue. Looking forward to your response in this regard.</p> <p>CoU-DWS -Jackie Lourens responded (2025/09/29 16:22): Investigation and findings: The Electro-Mechanical maintenance team has conducted the investigation at the pump station for possible fault and diagnose the possible cause/s. The pump station is currently not operational; there is sewerage inside the pump station yard and the manhole at the entrance to the pump station is overflowing. Both pumps failed after the power supply interruption around the area. The following possibilities, that lead to pump failure, were not ruled out as part of the brainstorming methodology: - Sludge build up inside the pump station sump, - Type of pump installation used o Life span of the pumps version flygt 3300, new version flygt 3301 o MCC Panel condition, o Motor protection, - Overcurrent and inrush current in power supplies - Foreign and heavy objects entering into the sewerage system, - Load shedding by Eskom NOTE: Full report available</p>
857	Mpact -Traven Chetty responded, (2025/12/02 15:11): Mpact has investigated the exceedance at the Felixton station on the 29th of November 2025. Based on the plant process reports, all operation were stable with no abnormal activities taking place. To further this, the wind direction is also not in favour of emissions from Mpact. Based on this, it is unlikely that Mpact is the source of this exceedance.
858	Mondi - Kira Cobbold responded, (2025/12/03 08:02): Mondi has investigated the exceedances at Richardia and based on the predominantly north easterly wind direction, Mondi is unlikely the source. For the exceedance at Felixton, Mondi can be considered a potential source based on the north easterly wind direction and elevated TRS levels recorded at the Mondi portable station from 03:00. At this stage, the mill had not yet started up after annual shut, meaning the most likely contributor would have been TRS release from the SETP which is also supported by the spike in TRS levels at the portable station situated near the effluent plant. Mondi continues to monitor tank levels, drain conductivities and TRS levels closely while the mill is in startup phase.
859	Tongaat Hulett - Nicolas Govender responded (2025/12/04 08:25): The boilers experienced a choke on B8 bagasse conveyor which resulted in coal usage to sustain fires in boilers.

