

# Rindean Quarries Pty Ltd

## Air Quality and Meteorological Monitoring Monthly Summary

**DECEMBER 2023**

| SITE INFORMATION              |                                                                                                             |
|-------------------------------|-------------------------------------------------------------------------------------------------------------|
| <b>EPL Number:</b>            | 20548                                                                                                       |
| <b>EPA Website Link:</b>      | <a href="https://www.epa.nsw.gov.au/ViewPOEOLicence.aspx(nsw.gov.au)">ViewPOEOLicence.aspx (nsw.gov.au)</a> |
| <b>Licensee:</b>              | Rindean Quarries Pty Ltd                                                                                    |
| <b>Premises:</b>              | 620 Wisemans Ferry Road, SOMERSBY NSW 2250                                                                  |
| <b>EPL Monitoring Points:</b> | Points 8, 9 and 10                                                                                          |
| <b>Sampling Period:</b>       | DECEMBER 2023                                                                                               |
| <b>Obtained Date:</b>         | 09/01/2024                                                                                                  |
| <b>Publication Date:</b>      | 09/01/2024                                                                                                  |

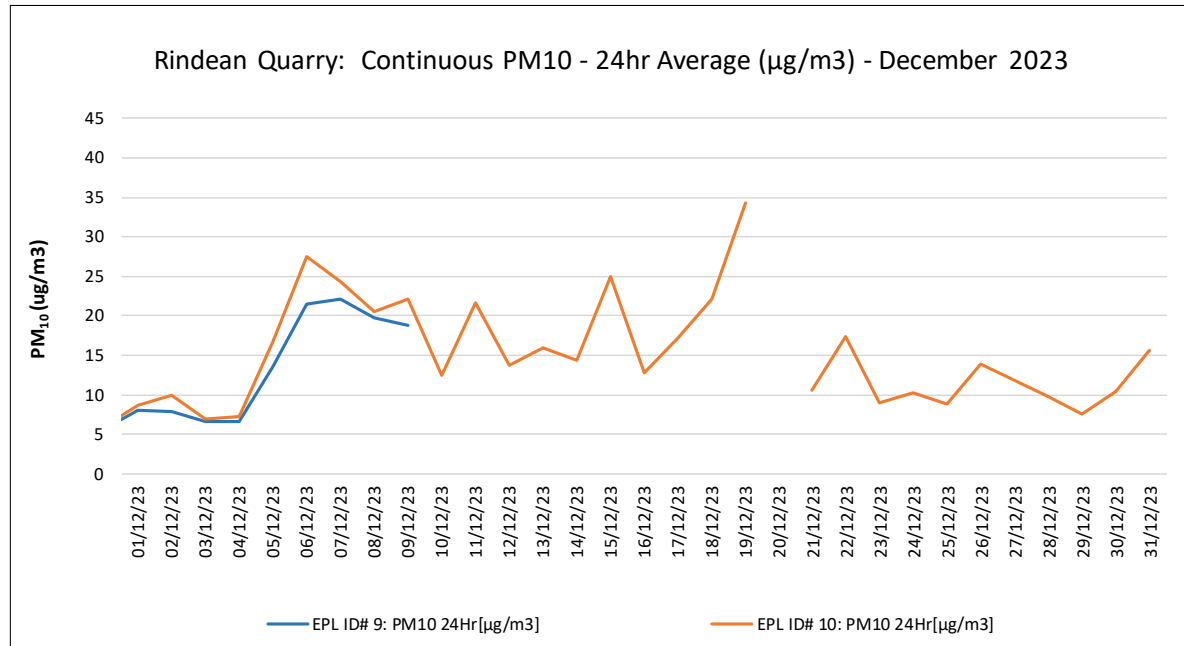
## 1. Continuous PM<sub>10</sub> (EPL ID #9 and #10)

**Table 1:** Continuous PM<sub>10</sub> Monitoring Results (24hr Averages) – December 2023

| DATE       | PM <sub>10</sub> 24hr Average<br>(µg/m <sup>3</sup> ) |                        |
|------------|-------------------------------------------------------|------------------------|
|            | EPA ID# 9<br>(Zone 1)                                 | EPA ID# 10<br>(Zone 2) |
| 1/12/2023  | 8.0                                                   | 8.6                    |
| 2/12/2023  | 7.8                                                   | 9.9                    |
| 3/12/2023  | 6.6                                                   | 6.9                    |
| 4/12/2023  | 6.7                                                   | 7.3                    |
| 5/12/2023  | 13.7                                                  | 16.7                   |
| 6/12/2023  | 21.5                                                  | 27.5                   |
| 7/12/2023  | 22.1                                                  | 24.3                   |
| 8/12/2023  | 19.7                                                  | 20.6                   |
| 9/12/2023  | 18.8                                                  | 22.2                   |
| 10/12/2023 |                                                       | 12.4                   |
| 11/12/2023 |                                                       | 21.7                   |
| 12/12/2023 |                                                       | 13.7                   |
| 13/12/2023 |                                                       | 16.0                   |
| 14/12/2023 |                                                       | 14.3                   |
| 15/12/2023 |                                                       | 25.0                   |
| 16/12/2023 |                                                       | 12.8                   |
| 17/12/2023 |                                                       | 17.1                   |
| 18/12/2023 |                                                       | 22.1                   |
| 19/12/2023 |                                                       | 34.3                   |
| 20/12/2023 |                                                       |                        |
| 21/12/2023 |                                                       | 10.5                   |
| 22/12/2023 |                                                       | 17.4                   |
| 23/12/2023 |                                                       | 8.9                    |
| 24/12/2023 |                                                       | 10.3                   |
| 25/12/2023 |                                                       | 8.8                    |
| 26/12/2023 |                                                       | 13.9                   |
| 27/12/2023 |                                                       | 11.9                   |
| 28/12/2023 |                                                       | 9.8                    |
| 29/12/2023 |                                                       | 7.5                    |
| 30/12/2023 |                                                       | 10.4                   |
| 31/12/2023 |                                                       | 15.6                   |

Note: Validated data. Blank cells in table indicate insufficient valid data to provide a 24hr average PM<sub>10</sub> result.

**Figure 1: Continuous 24hr Averages – December 2023**



**Table 2: PM<sub>10</sub> 24hr Average Monthly Summary Results – December 2023**

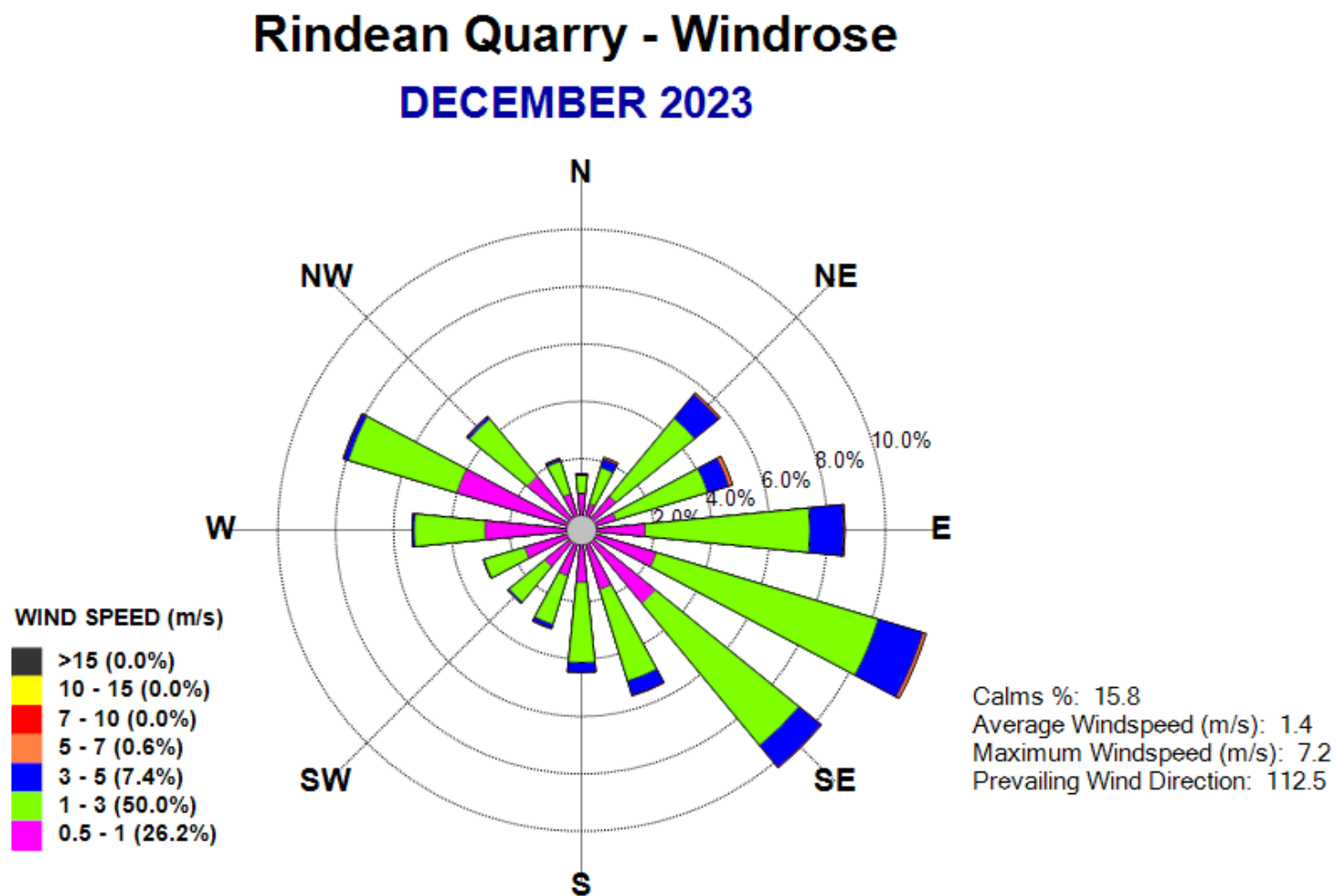
| EPL 20548 Sampling Point | Location ID | Pollutant        | Unit              | Monitoring Frequency Required by Licence | No. of times measured during month | Min Value (µg/m <sup>3</sup> ) | Mean Value (µg/m <sup>3</sup> ) | Max Value (µg/m <sup>3</sup> ) |
|--------------------------|-------------|------------------|-------------------|------------------------------------------|------------------------------------|--------------------------------|---------------------------------|--------------------------------|
| 9                        | Zone 1      | PM <sub>10</sub> | µg/m <sup>3</sup> | Continuous                               | Continuous                         | 6.6                            | 13.9                            | 22.1                           |
| 10                       | Zone 2      | PM <sub>10</sub> | µg/m <sup>3</sup> | Continuous                               | Continuous                         | 6.9                            | 15.3                            | 34.3                           |

## 2. Meteorological (EPL ID #8)

**Table 3:** Monthly Meteorological Data Summary – December 2023

| Date       | Temp 2m Min | Temp 2m Ave | Temp 2m Max | 10m Temp Min | 10m Temp Ave | 10m Temp Max | Humidity Min | Humidity Ave | Humidity Max | Wind Speed Min | Wind Speed Ave | Wind Speed Max | Rain (mm) | Solar Rad Min | Solar Rad Ave | Solar Rad Max | Delta Temp Min | Delta Temp Ave | Delta Temp Max | Sigma Theta Min | Sigma Theta Ave | Sigma Theta Max |
|------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------|----------------|----------------|-----------|---------------|---------------|---------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|
| 1/12/2023  | 16.0        | 20.7        | 27.8        | 16.8         | 20.5         | 26.7         | 39.5         | 87.3         | 100.0        | 0.0            | 1.1            | 4.3            | 0.0       | 0.0           | 230.2         | 1184.2        | -1.9           | 0.1            | 2.8            | 4.8             | 38.0            | 94.5            |
| 2/12/2023  | 17.0        | 19.7        | 25.3        | 17.1         | 19.5         | 24.1         | 90.1         | 99.5         | 100.0        | 0.1            | 1.1            | 4.3            | 27.2      | 0.0           | 117.9         | 769.7         | -1.5           | 0.2            | 2.0            | 9.2             | 42.5            | 96.2            |
| 3/12/2023  | 14.0        | 19.3        | 27.3        | 14.6         | 19.0         | 26.0         | 34.8         | 87.4         | 99.9         | 0.1            | 1.3            | 4.3            | 15.8      | 0.0           | 265.7         | 1099.4        | -0.9           | 0.3            | 2.1            | 5.6             | 35.5            | 100.8           |
| 4/12/2023  | 14.8        | 18.2        | 23.1        | 15.1         | 18.0         | 22.3         | 74.1         | 94.4         | 100.0        | 0.1            | 1.3            | 3.9            | 0.0       | 0.0           | 116.1         | 1137.6        | -1.0           | 0.2            | 1.6            | 6.7             | 31.7            | 84.8            |
| 5/12/2023  | 13.9        | 23.6        | 32.5        | 14.7         | 23.4         | 30.9         | 24.4         | 70.3         | 99.9         | 0.1            | 1.6            | 6.8            | 0.0       | 0.0           | 264.5         | 1127.5        | -2.4           | 0.1            | 2.6            | 2.6             | 33.7            | 71.8            |
| 6/12/2023  | 16.8        | 22.4        | 26.1        | 17.1         | 22.2         | 28.2         | 32.7         | 75.4         | 100.0        | 0.1            | 1.5            | 4.8            | 0.0       | 0.0           | 256.1         | 1068.1        | -2.4           | 0.1            | 1.8            | 11.4            | 29.1            | 74.4            |
| 7/12/2023  | 16.3        | 21.3        | 30.1        | 16.7         | 21.0         | 29.0         | 57.7         | 93.6         | 99.9         | 0.1            | 1.3            | 4.4            | 0.0       | 0.0           | 243.3         | 1080.4        | -0.6           | 0.4            | 1.8            | 7.8             | 39.0            | 101.7           |
| 8/12/2023  | 18.4        | 25.8        | 33.5        | 18.7         | 25.4         | 32.1         | 46.6         | 76.6         | 99.9         | 0.1            | 1.7            | 5.5            | 0.0       | 0.0           | 241.4         | 1083.2        | -1.4           | 0.3            | 2.3            | 15.6            | 34.6            | 89.2            |
| 9/12/2023  | 21.3        | 29.2        | 41.3        | 21.2         | 29.4         | 40.2         | 16.6         | 53.1         | 99.9         | 0.1            | 1.6            | 6.9            | 17.2      | 0.0           | 253.6         | 1054.6        | -5.0           | -0.2           | 2.4            | 6.6             | 43.4            | 99.0            |
| 10/12/2023 | 19.2        | 21.4        | 26.3        | 19.2         | 21.1         | 25.2         | 99.8         | 99.8         | 99.9         | 0.1            | 1.5            | 4.8            | 1.6       | 0.0           | 123.4         | 933.0         | -0.1           | 0.3            | 2.1            | 18.2            | 42.0            | 83.9            |
| 11/12/2023 | 18.8        | 22.6        | 30.0        | 18.9         | 22.1         | 28.8         | 68.0         | 96.2         | 100.0        | 0.2            | 1.2            | 4.5            | 0.0       | 0.0           | 210.8         | 1049.7        | -0.3           | 0.4            | 1.9            | 15.1            | 44.1            | 101.4           |
| 12/12/2023 | 18.3        | 22.0        | 26.5        | 19.0         | 21.7         | 25.3         | 69.1         | 92.4         | 99.9         | 0.1            | 1.6            | 5.1            | 0.0       | 0.0           | 184.5         | 1089.2        | -0.9           | 0.3            | 2.4            | 11.2            | 32.4            | 82.5            |
| 13/12/2023 | 19.3        | 23.2        | 28.2        | 19.5         | 22.8         | 26.7         | 84.5         | 96.4         | 100.0        | 0.2            | 1.8            | 6.5            | 0.0       | 0.0           | 210.8         | 1220.3        | -1.0           | 0.4            | 2.0            | 12.5            | 34.4            | 90.4            |
| 14/12/2023 | 20.7        | 28.4        | 37.4        | 20.8         | 28.4         | 36.8         | 13.7         | 59.8         | 100.0        | 0.1            | 1.4            | 7.2            | 0.0       | 0.0           | 222.1         | 1122.9        | -2.0           | 0.0            | 2.1            | 12.6            | 51.3            | 88.7            |
| 15/12/2023 | 19.1        | 21.5        | 24.5        | 19.2         | 21.1         | 23.7         | 82.0         | 97.1         | 99.9         | 0.1            | 1.8            | 6.7            | 0.0       | 0.0           | 172.0         | 1112.4        | -0.3           | 0.5            | 1.9            | 19.7            | 37.8            | 89.6            |
| 16/12/2023 | 17.1        | 24.6        | 34.7        | 17.6         | 24.3         | 33.8         | 8.0          | 65.6         | 99.9         | 0.1            | 1.4            | 4.7            | 0.0       | 0.0           | 272.8         | 1167.7        | -0.7           | 0.3            | 3.3            | 10.8            | 40.6            | 91.0            |
| 17/12/2023 | 19.2        | 21.0        | 24.0        | 19.2         | 20.7         | 23.0         | 92.0         | 98.5         | 100.0        | 0.1            | 1.9            | 5.3            | 0.0       | 0.0           | 116.1         | 654.7         | -0.2           | 0.3            | 1.4            | 14.5            | 27.9            | 46.2            |
| 18/12/2023 | 18.7        | 22.2        | 27.9        | 19.0         | 22.0         | 26.4         | 94.2         | 99.7         | 100.0        | 0.1            | 1.3            | 4.5            | 0.0       | 0.0           | 123.7         | 1048.5        | -0.6           | 0.3            | 1.8            | 7.7             | 31.2            | 76.9            |
| 19/12/2023 | 21.1        | 24.5        | 28.5        | 21.0         | 24.4         | 28.5         | 37.8         | 83.0         | 99.9         | 0.0            | 1.2            | 5.3            | 0.0       | 0.0           | 59.2          | 224.5         | -0.6           | 0.1            | 1.0            | 16.2            | 48.4            | 84.6            |
| 20/12/2023 | 14.9        | 17.5        | 21.1        | 14.9         | 17.5         | 20.9         | 99.8         | 99.8         | 99.9         | 0.1            | 1.4            | 4.8            | 29.8      | 0.0           | 28.6          | 127.8         | -0.1           | 0.1            | 0.4            | 14.5            | 48.2            | 87.8            |
| 21/12/2023 | 14.6        | 16.8        | 19.6        | 14.6         | 16.8         | 19.2         | 95.9         | 99.8         | 100.0        | 0.1            | 1.3            | 5.8            | 4.0       | 0.0           | 86.3          | 461.8         | -0.5           | 0.0            | 0.6            | 30.3            | 48.6            | 78.9            |
| 22/12/2023 | 15.6        | 18.4        | 21.9        | 15.7         | 18.0         | 21.1         | 51.2         | 85.6         | 100.0        | 0.2            | 1.4            | 5.1            | 0.2       | 0.0           | 216.2         | 1199.0        | -0.6           | 0.4            | 2.1            | 16.2            | 47.0            | 82.8            |
| 23/12/2023 | 15.1        | 18.9        | 24.1        | 15.3         | 18.5         | 22.9         | 69.9         | 93.3         | 100.0        | 0.0            | 1.3            | 4.5            | 0.6       | 0.0           | 214.7         | 1186.4        | -0.7           | 0.4            | 1.9            | 9.6             | 34.4            | 87.8            |
| 24/12/2023 | 17.2        | 19.5        | 23.2        | 17.2         | 19.2         | 22.5         | 94.9         | 99.6         | 100.0        | 0.1            | 1.0            | 4.0            | 10.6      | 0.0           | 122.1         | 708.3         | -0.9           | 0.2            | 1.5            | 8.5             | 37.6            | 100.6           |
| 25/12/2023 | 16.5        | 20.5        | 25.8        | 16.8         | 20.2         | 25.0         | 75.2         | 97.4         | 100.0        | 0.1            | 1.6            | 6.3            | 1.2       | 0.0           | 169.6         | 1207.1        | -0.3           | 0.3            | 1.8            | 13.8            | 36.6            | 90.3            |
| 26/12/2023 | 18.8        | 21.7        | 28.0        | 19.2         | 21.5         | 26.7         | 83.4         | 99.1         | 100.0        | 0.0            | 1.5            | 4.4            | 4.8       | 0.0           | 202.6         | 1169.7        | -0.8           | 0.2            | 2.6            | 7.2             | 33.3            | 93.4            |
| 27/12/2023 | 16.9        | 19.7        | 25.4        | 17.7         | 19.7         | 24.2         | 91.0         | 99.5         | 100.0        | 0.0            | 1.0            | 6.1            | 5.4       | 0.0           | 154.7         | 1013.1        | -1.5           | -0.1           | 1.9            | 4.2             | 34.9            | 94.1            |
| 28/12/2023 | 16.4        | 22.4        | 31.4        | 17.5         | 22.4         | 30.4         | 30.3         | 77.3         | 100.0        | 0.2            | 1.4            | 5.2            | 0.2       | 0.0           | 218.1         | 1113.4        | -1.5           | 0.0            | 2.6            | 10.5            | 32.9            | 93.9            |
| 29/12/2023 | 17.9        | 21.4        | 25.0        | 18.6         | 21.5         | 24.4         | 52.9         | 94.4         | 100.0        | 0.1            | 1.2            | 3.9            | 0.0       | 0.0           | 124.4         | 615.7         | -1.8           | -0.1           | 1.4            | 4.1             | 32.5            | 94.3            |
| 30/12/2023 | 17.3        | 21.0        | 25.8        | 17.7         | 20.9         | 24.5         | 49.9         | 73.1         | 99.9         | 0.1            | 1.9            | 5.1            | 1.4       | 0.0           | 260.3         | 1147.8        | -1.7           | 0.2            | 1.9            | 14.9            | 38.7            | 89.5            |
| 31/12/2023 | 15.6        | 17.3        | 19.9        | 15.4         | 17.2         | 19.4         | 93.6         | 99.3         | 100.0        | 0.1            | 1.2            | 4.2            | 4.2       | 0.0           | 47.4          | 242.8         | -0.7           | 0.1            | 0.7            | 9.6             | 29.3            | 97.7            |
| Monthly    | 13.9        | 21.5        | 41.3        | 14.6         | 21.3         | 40.2         | 8            | 88.5         | 100          | 0.0            | 1.4            | 7.2            | 124.2     | 0.0           | 178.4         | 1220.3        | -5.0           | 0.2            | 3.3            | 2.60            | 37.8            | 101.70          |

Figure 2: Windrose – December 2023



**Figure 3-5: Daily (minimum, average, maximum) 2m & 10m Temperature and Delta Temperature**

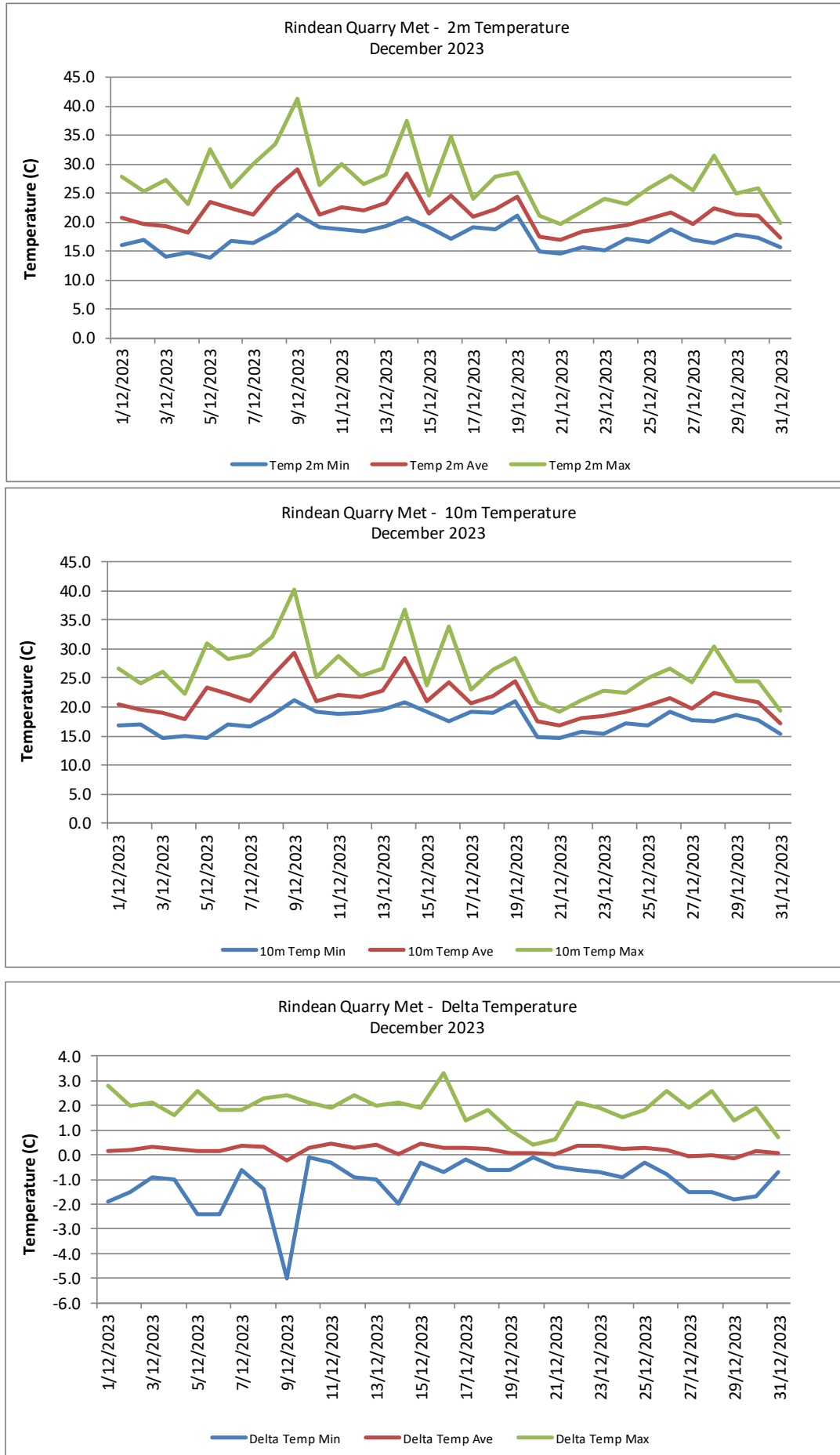
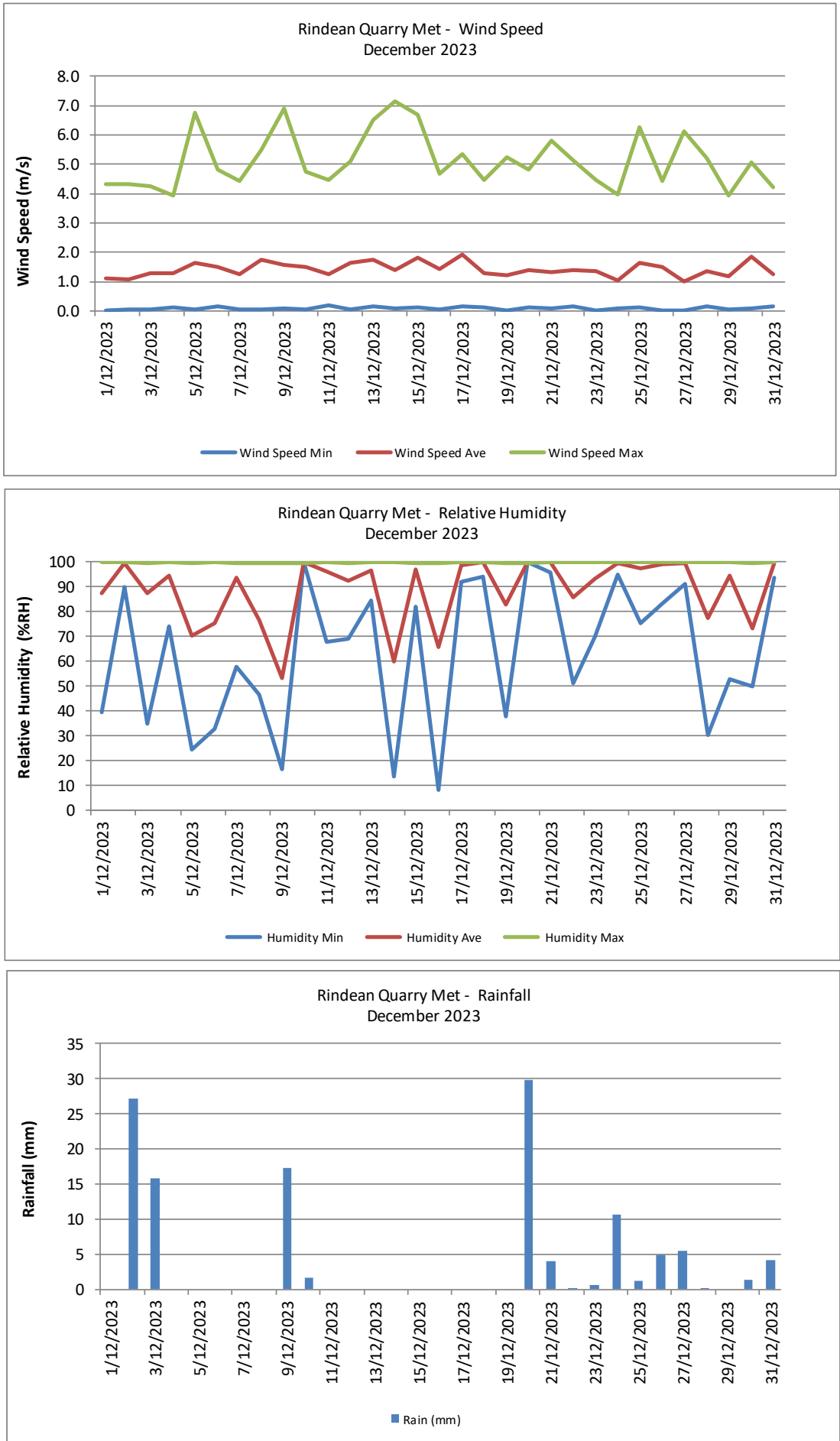


Figure 6-8: Daily (minimum, average, maximum) Wind Speed & Humidity and Rainfall



**Figure 9-10: Daily (minimum, average, maximum) Solar Radiation and Sigma Theta**

