

GLENCORE

Ravensworth Complex

Monthly Pollution Monitoring Report

December 2019

Note: This report will be edited and re-uploaded onto the internet within 14 days of obtaining any data that has not been included in this report.

A map of EPL 2652 monitoring locations can be found at

<http://www.ravensworthoperations.com.au/en/publications/Pages/environmental-monitoring-maps.aspx>

DNR = Data Not Received.

License Holder: Ravensworth Operations Pty Ltd

Site Address: Ravensworth Mining Complex, off Lemington Road, Ravensworth, NSW, 2333

EPL Number: 2652

DEFINITIONS

| Abbreviation | Explanation |
|-------------------------|---|
| mm/s | Millimetres per second |
| db | Decibels |
| g/m ² /month | Grams per metre square per month |
| µg/m ³ | Micrograms per Cubic Meter of Air |
| µS/cm | Microsiemens Per Centimeter |
| pH | A measure of the acidity or alkalinity of a solution |
| mg/L | Milligrams per litre |
| NTU | Nephelometric turbidity units |
| ML/day | Megalitres per day |
| KL/day | Kilolitres per day |
| PM10 | Particulate Matter of 10 Microns in diameter or smaller |
| HVAS | High Volume Air Sampler |
| TSP | Total suspended particles |
| TSS | Total suspended solids |

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BLAST

December 2019

Sampled: Every Blast Event
 Obtained: As per date of blast
 Published: 10/02/2020

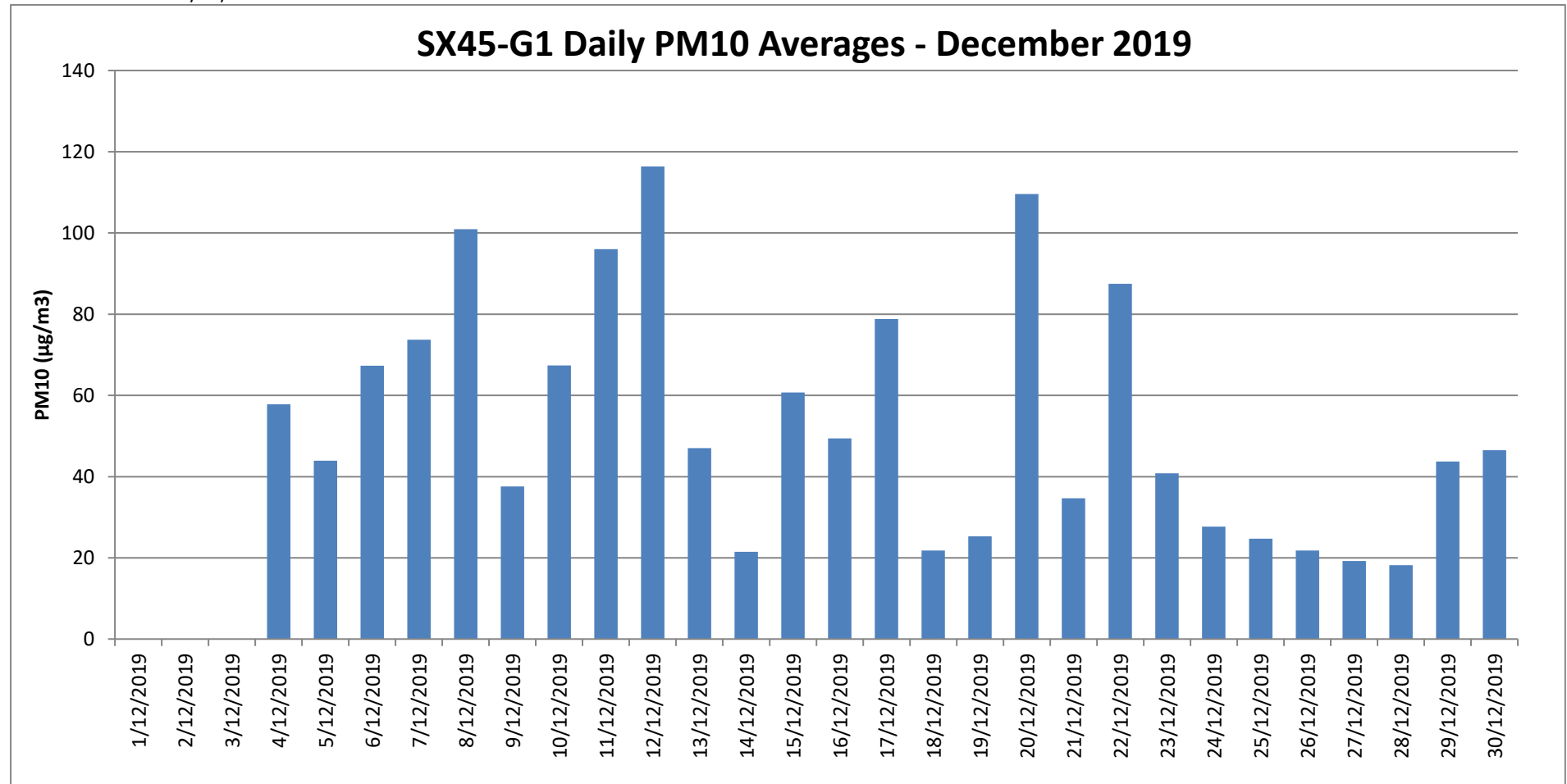
| Date/Time | Overpressure (dB) | | | | | Vibration (mm/s) | | | | |
|------------|------------------------------------|---------------------------------------|---|-------|---------------------------------|------------------------------------|---------------------------------------|---|-------|---------------------------------|
| | BWM - Bowman Residence EPL Point 8 | CWL - Camberwe Il Village EPL Point 7 | Allowable Exceedance of 5% of total blasts over 12 month period | Limit | Identified Exceedances (Yes/No) | BWM - Bowman Residence EPL Point 8 | CWL - Camberwe Il Village EPL Point 7 | Allowable Exceedance of 5% of total blasts over 12 month period | Limit | Identified Exceedances (Yes/No) |
| 5/12/2019 | 108 | 103.4 | 115 | 120 | N | 0.08 | 0.22 | 5 | 10 | N |
| 5/12/2019 | 106.3 | 99 | 115 | 120 | N | 0.45 | 0.22 | 5 | 10 | N |
| 9/12/2019 | 92.7 | 95.9 | 115 | 120 | N | 0.07 | 0.08 | 5 | 10 | N |
| 11/12/2019 | 93.3 | 89.6 | 115 | 120 | N | 0.21 | 0.11 | 5 | 10 | N |
| 11/12/2019 | 100.2 | 89.5 | 115 | 120 | N | 0.01 | 0.08 | 5 | 10 | N |
| 12/12/2019 | 97.5 | 93.3 | 115 | 120 | N | 0.07 | 0.09 | 5 | 10 | N |
| 17/12/2019 | 109.7 | 109.1 | 115 | 120 | N | 0.07 | 0.03 | 5 | 10 | N |
| 17/12/2019 | 108.3 | 95.5 | 115 | 120 | N | 0.12 | 0.04 | 5 | 10 | N |
| 19/12/2019 | 97.8 | 92.4 | 115 | 120 | N | 0.03 | 0.02 | 5 | 10 | N |
| 20/12/2019 | 101.1 | 101.1 | 115 | 120 | N | 0.1 | 0.07 | 5 | 10 | N |
| 23/12/2019 | 101 | 94.7 | 115 | 120 | N | 0.08 | 0.06 | 5 | 10 | N |
| 23/12/2019 | 99.1 | 89.5 | 115 | 120 | N | 0.12 | 0.08 | 5 | 10 | N |
| 24/12/2019 | 89.5 | 79.5 | 115 | 120 | N | 0.11 | 0.06 | 5 | 10 | N |
| 24/12/2019 | 95.6 | 90.1 | 115 | 120 | N | 0.03 | 0.02 | 5 | 10 | N |
| 24/12/2019 | 94.1 | 86.9 | 115 | 120 | N | 0.03 | 0.04 | 5 | 10 | N |
| 31/12/2019 | 100.5 | 95 | 115 | 120 | N | 0.03 | 0.04 | 5 | 10 | N |
| 31/12/2019 | 105.6 | 94 | 115 | 120 | N | 0.1 | 0.11 | 5 | 10 | N |

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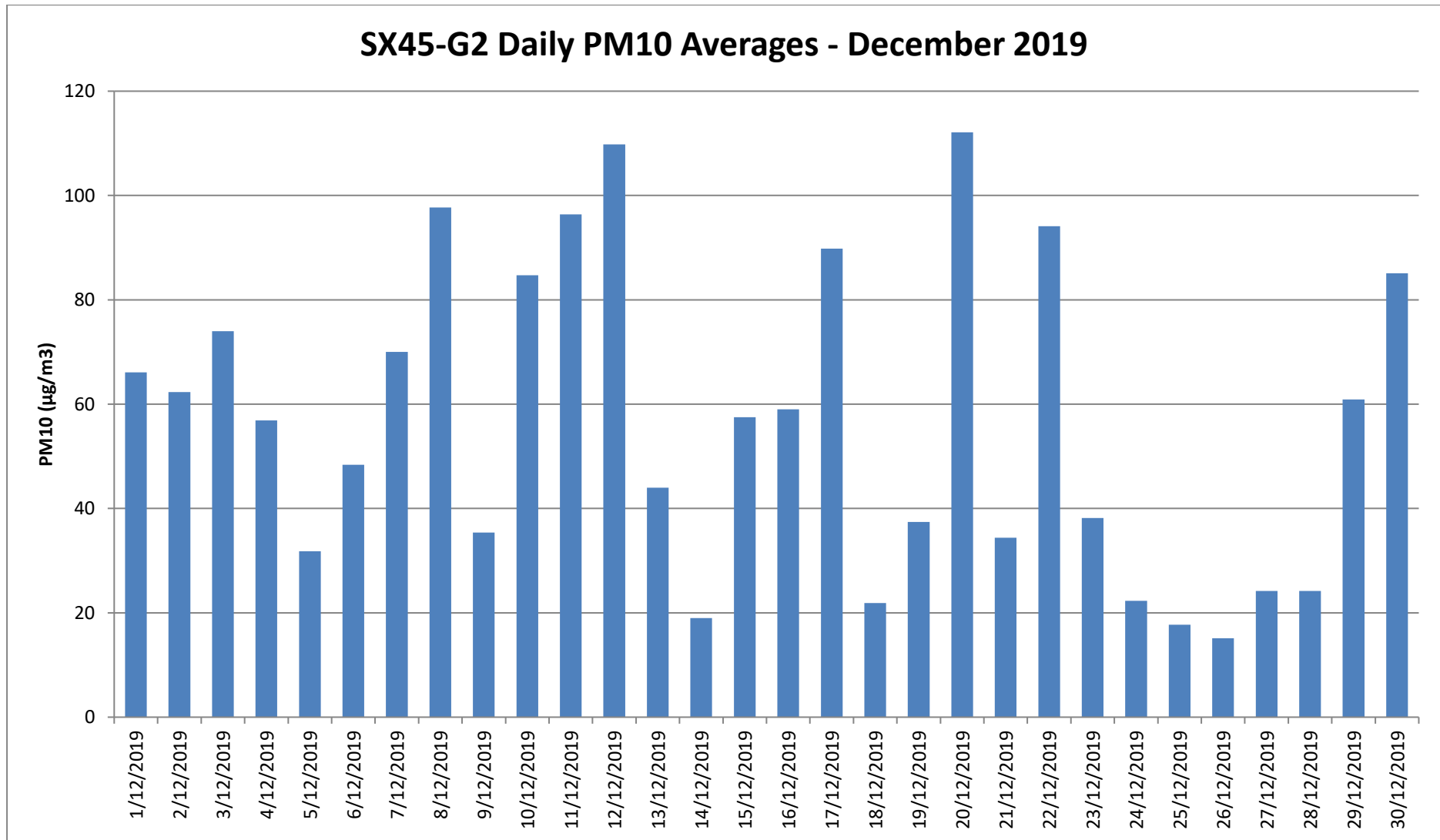
DUST TEOMs

December 2019

Sampled: Continuous
Obtained: 8/01/2020
Published: 10/02/2020



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DISCHARGE MONITORING

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No discharge events occurred during December.

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EPL Number: 2652

NOISE MONITORING

December 2019

Sampled: As Specified

Obtained: 10/02/2020

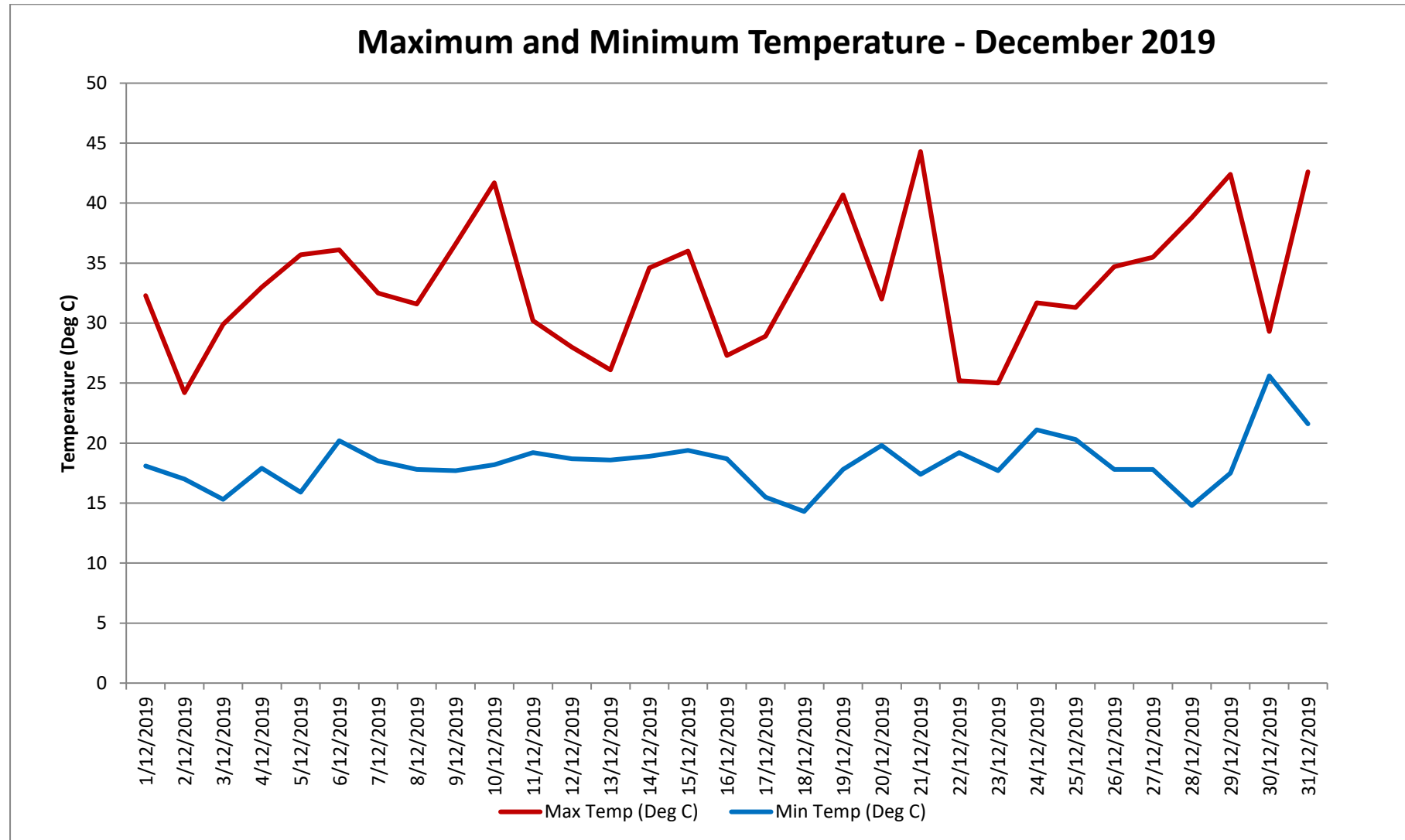
Published: 10/02/2020

| Monitoring Location | Receiver Location | Date and Time | dB(A), Leq | Ravensworth Mine Complex Contribution dB(A), Leq | Criterion dB(A) Leq | dB(A), L1 (1min) ¹ | Criterion dB(A), L1 (1min) ¹ | Stability Class | Wind speed (m/s) | Wind direction (°) | Compliant |
|---------------------|-------------------|-------------------|------------|--|---------------------|-------------------------------|---|-----------------|------------------|--------------------|-----------|
| Site 2 | R2 | 18/12/19 9:52 pm | 33 | 22 | 35 | 25 | 45 | F | 2.4 | 169 | Yes |
| Site 3 | R3 | 18/12/19 10:45 pm | 35 | <20 | 35 | <20 | 45 | E | 2.7 | 148 | Yes |
| Site 5 | R3 | 18/12/19 11:08 pm | 42 | <20 | 35 | <20 | 45 | F | 2.3 | 111 | Yes |
| Site 6 | R4 | 18/12/19 11:26 pm | 39 | <20 | 35 | <20 | 45 | F | 0.5 | 205 | Yes |

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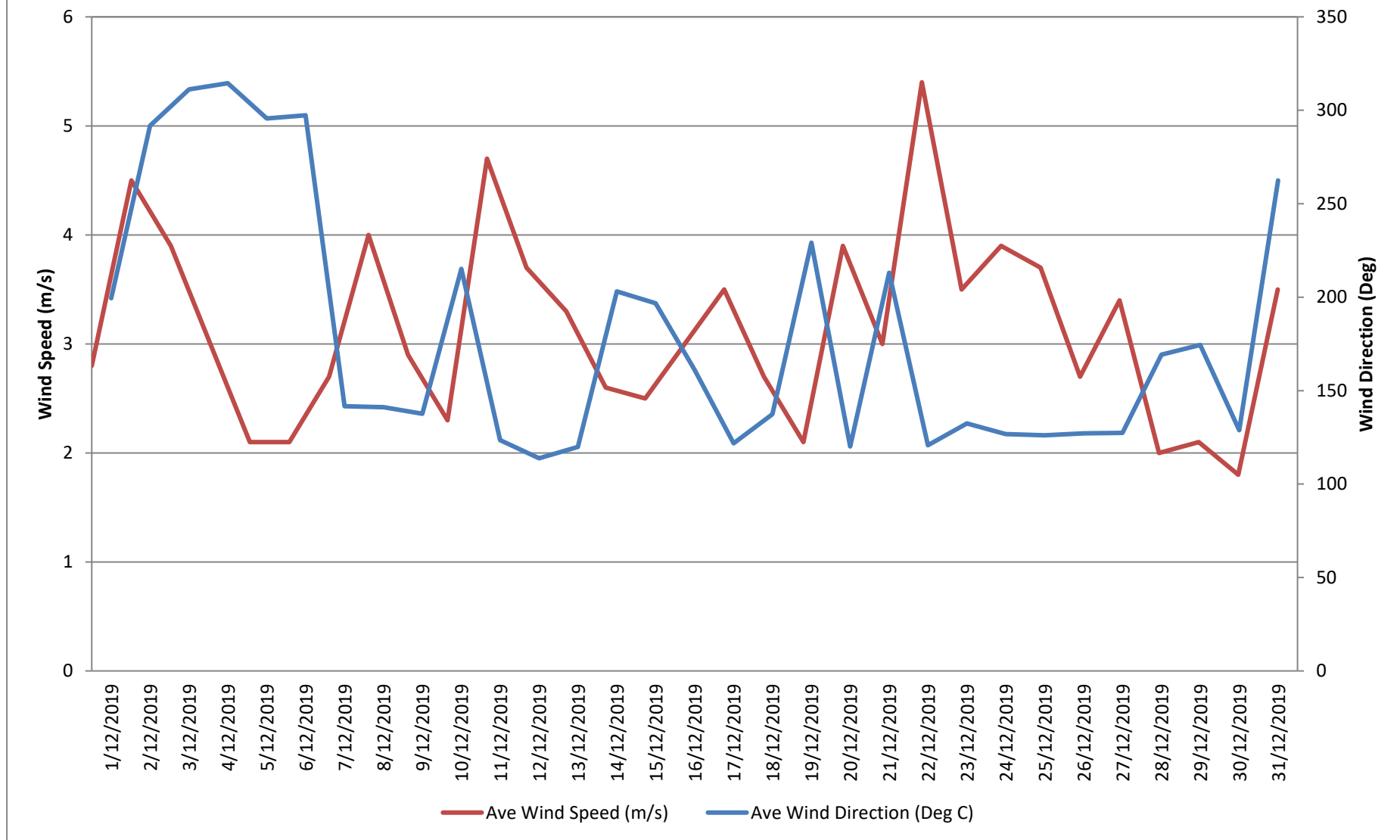
Meteorological Data

December 2019



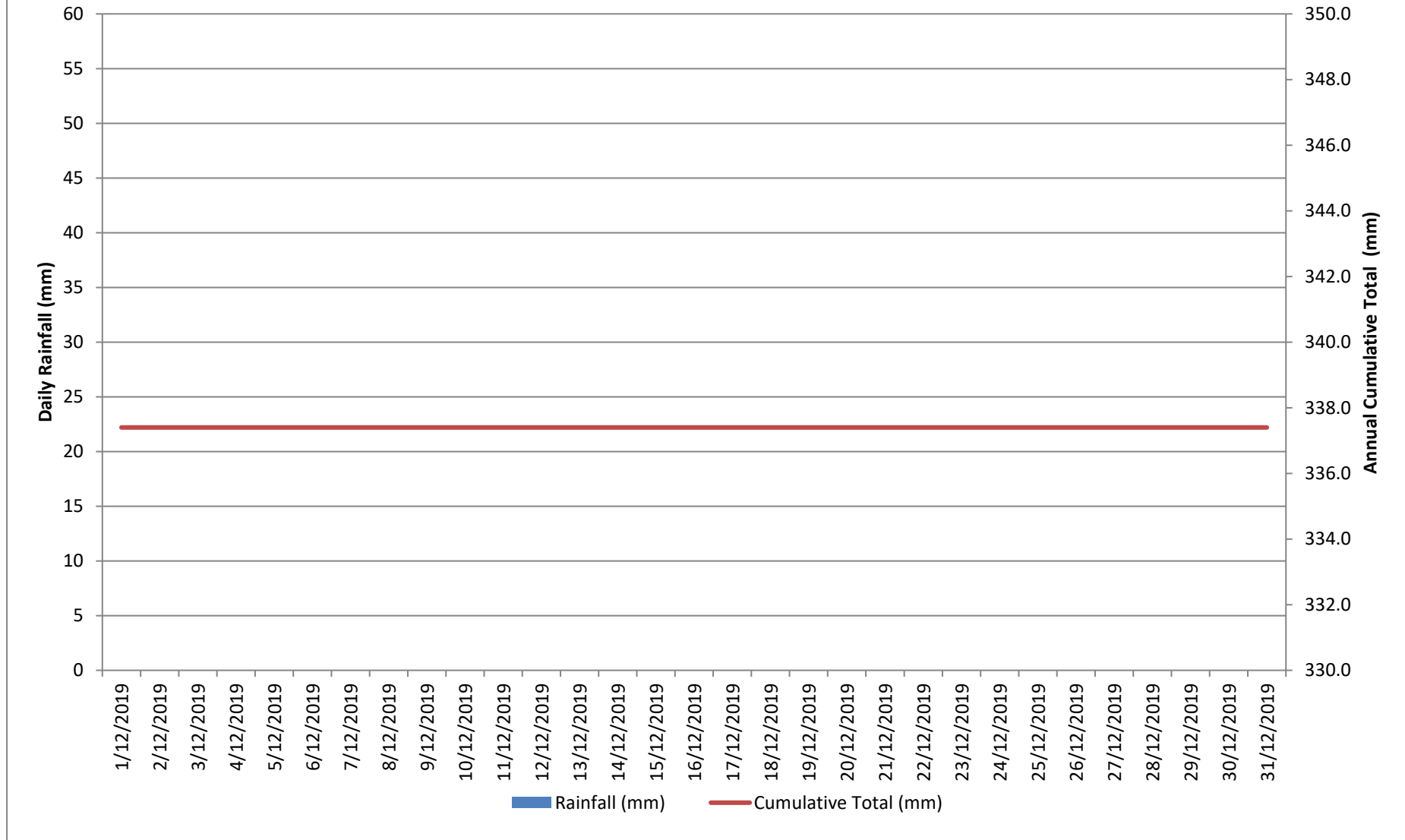
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Average Wind Speed and Direction - December 2019



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Daily and Total Rainfall - December 2019



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