

GLENCORE

Ravensworth Complex

Monthly Pollution Monitoring Report

October 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

October 2019

Sampled: Every Blast Event
 Obtained: As per date of blast
 Published: 29/11/2019

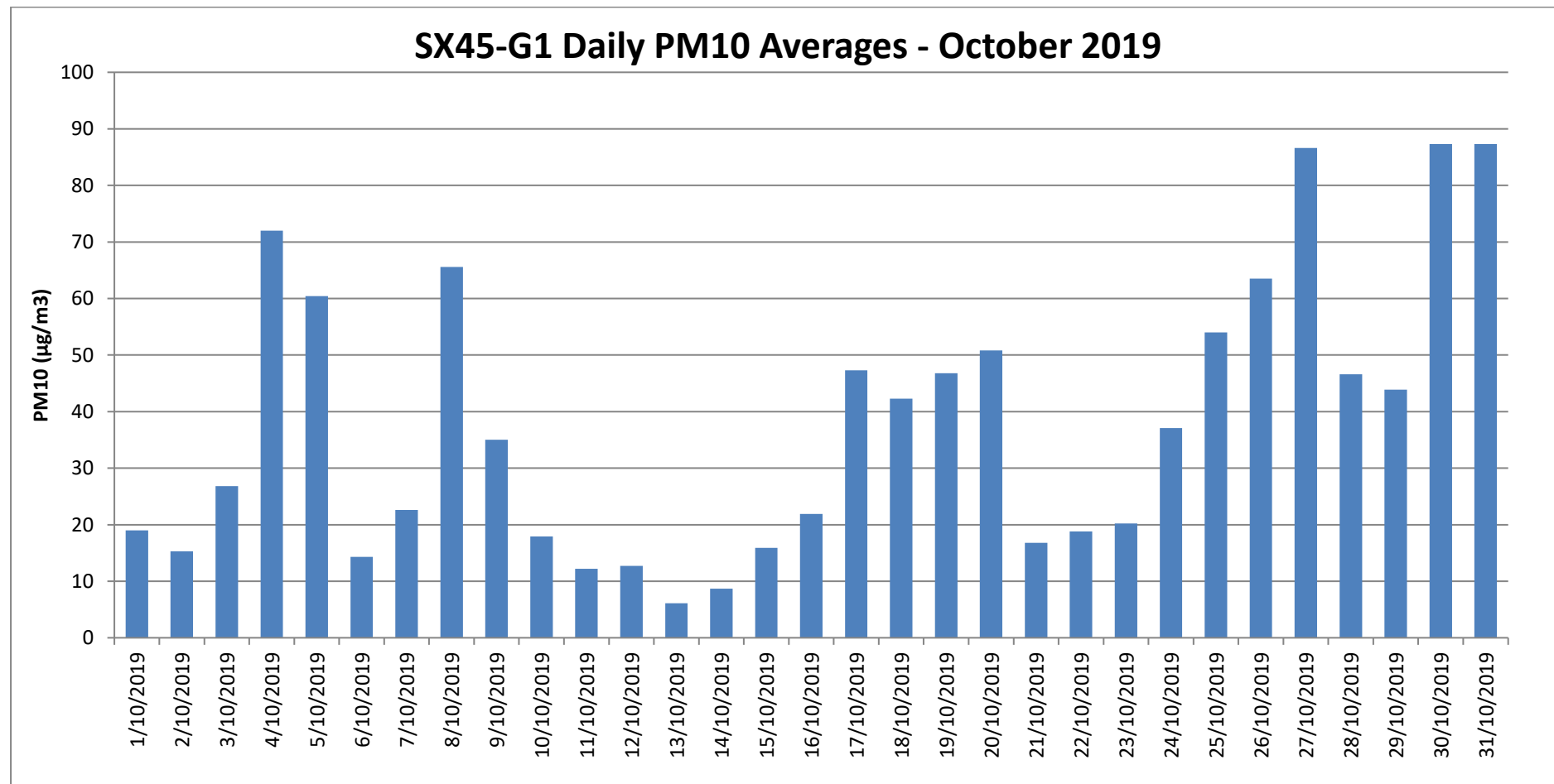
| Date/Time | Overpressure (dB) | | | | | Vibration (mm/s) | | | | |
|-----------|------------------------------------|--------------------------------------|---|-------|---------------------------------|------------------------------------|--------------------------------------|---|-------|---------------------------------|
| | BWM - Bowman Residence EPL Point 8 | CWL - Camberwell 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 - Camberwell Village EPL Point 7 | Allowable Exceedance of 5% of total blasts over 12 month period | Limit | Identified Exceedances (Yes/No) |
| 1/10/19 | 99 | 81.5 | 115 | 120 | N | 0.06 | 0.05 | 5 | 10 | N |
| 1/10/19 | 99.9 | 97.7 | 115 | 120 | N | 0.17 | 0.25 | 5 | 10 | N |
| 2/10/19 | 93.6 | 95.9 | 115 | 120 | N | 0.14 | 0.09 | 5 | 10 | N |
| 4/10/19 | 108.2 | 88 | 115 | 120 | N | 0.3 | 0.24 | 5 | 10 | N |
| 9/10/19 | 99.5 | 79.5 | 115 | 120 | N | 0.03 | 0.03 | 5 | 10 | N |
| 9/10/19 | 92.2 | 97.3 | 115 | 120 | N | 0.08 | 0.06 | 5 | 10 | N |
| 11/10/19 | 99.5 | 88.3 | 115 | 120 | N | 0.14 | 0.08 | 5 | 10 | N |
| 16/10/19 | 90.5 | 80.1 | 115 | 120 | N | 0.09 | 0.06 | 5 | 10 | N |
| 18/10/19 | 102.9 | 98.2 | 115 | 120 | N | 0.04 | 0.07 | 5 | 10 | N |
| 18/10/19 | 103.6 | 90.5 | 115 | 120 | N | 0.16 | 0.1 | 5 | 10 | N |
| 18/10/19 | 99.1 | 100.4 | 115 | 120 | N | 0.28 | 0.14 | 5 | 10 | N |
| 21/10/19 | 80.9 | 83.5 | 115 | 120 | N | 0.02 | 0.12 | 5 | 10 | N |
| 22/10/19 | 93.8 | 95.8 | 115 | 120 | N | 0.03 | 0.06 | 5 | 10 | N |
| 23/10/19 | 86.9 | 88.6 | 115 | 120 | N | 0.19 | 0.13 | 5 | 10 | N |
| 24/10/19 | 95.8 | 104.2 | 115 | 120 | N | 0.01 | 0.04 | 5 | 10 | N |
| 25/10/19 | 92.2 | 102.8 | 115 | 120 | N | 0.34 | 0.15 | 5 | 10 | N |
| 29/10/19 | 96.1 | 98.6 | 115 | 120 | N | 0.14 | 0.09 | 5 | 10 | N |
| 29/10/19 | 81.8 | 82.7 | 115 | 120 | N | 0.07 | 0.04 | 5 | 10 | N |
| 30/10/19 | 96.3 | 90 | 115 | 120 | N | 0.06 | 0.06 | 5 | 10 | N |
| 31/10/19 | 98.8 | 87.1 | 115 | 120 | N | 0.02 | 0.02 | 5 | 10 | N |
| 31/10/19 | 101.2 | 89.5 | 115 | 120 | N | 0.05 | 0.05 | 5 | 10 | N |

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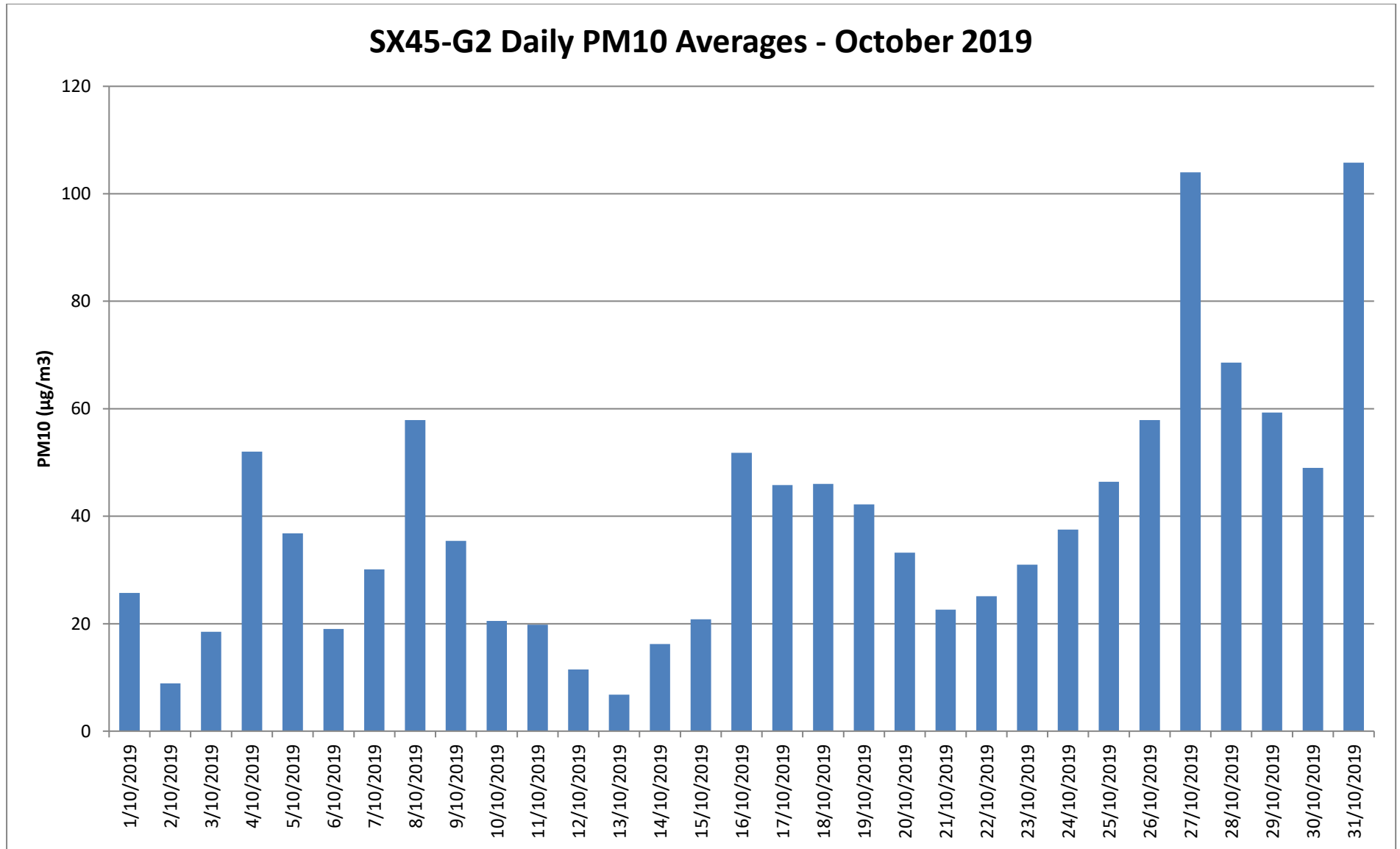
DUST TEOMs

October 2019

Sampled: Continuous
Obtained: 1/11/2019
Published: 28/11/2019



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DISCHARGE MONITORING

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No discharge events occurred during October.

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NOISE MONITORING

October 2019

Sampled: As Specified

Obtained: 26/11/2019

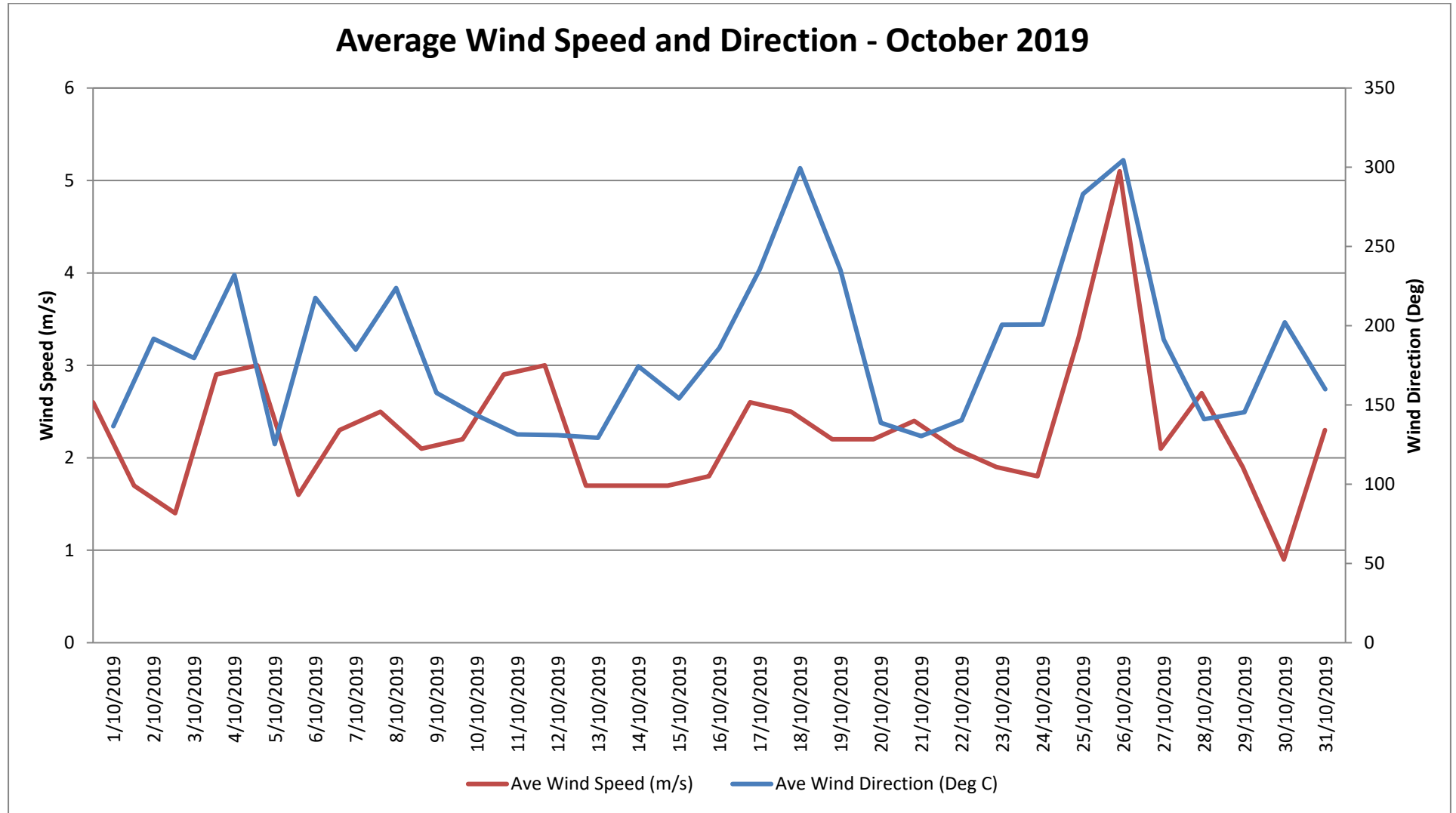
Published: 28/11/2019

| 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 | 21/10/19 9:44 pm | 35 | 30 | 35 | 33 | 45 | D | 2.7 | 156 | Yes |
| Site 3 | R3 | 21/10/19 10:30 pm | 33 | 28 | 35 | 33 | 45 | D | 2.1 | 169 | Yes |
| Site 5 | R3 | 21/10/19 10:51 pm | 49 | <20 | 35 | <20 | 45 | D | 2.6 | 164 | Yes |
| Site 6 | R4 | 21/10/19 11:15 pm | 49 | <20 | 35 | <20 | 45 | D | 2.7 | 153 | Yes |

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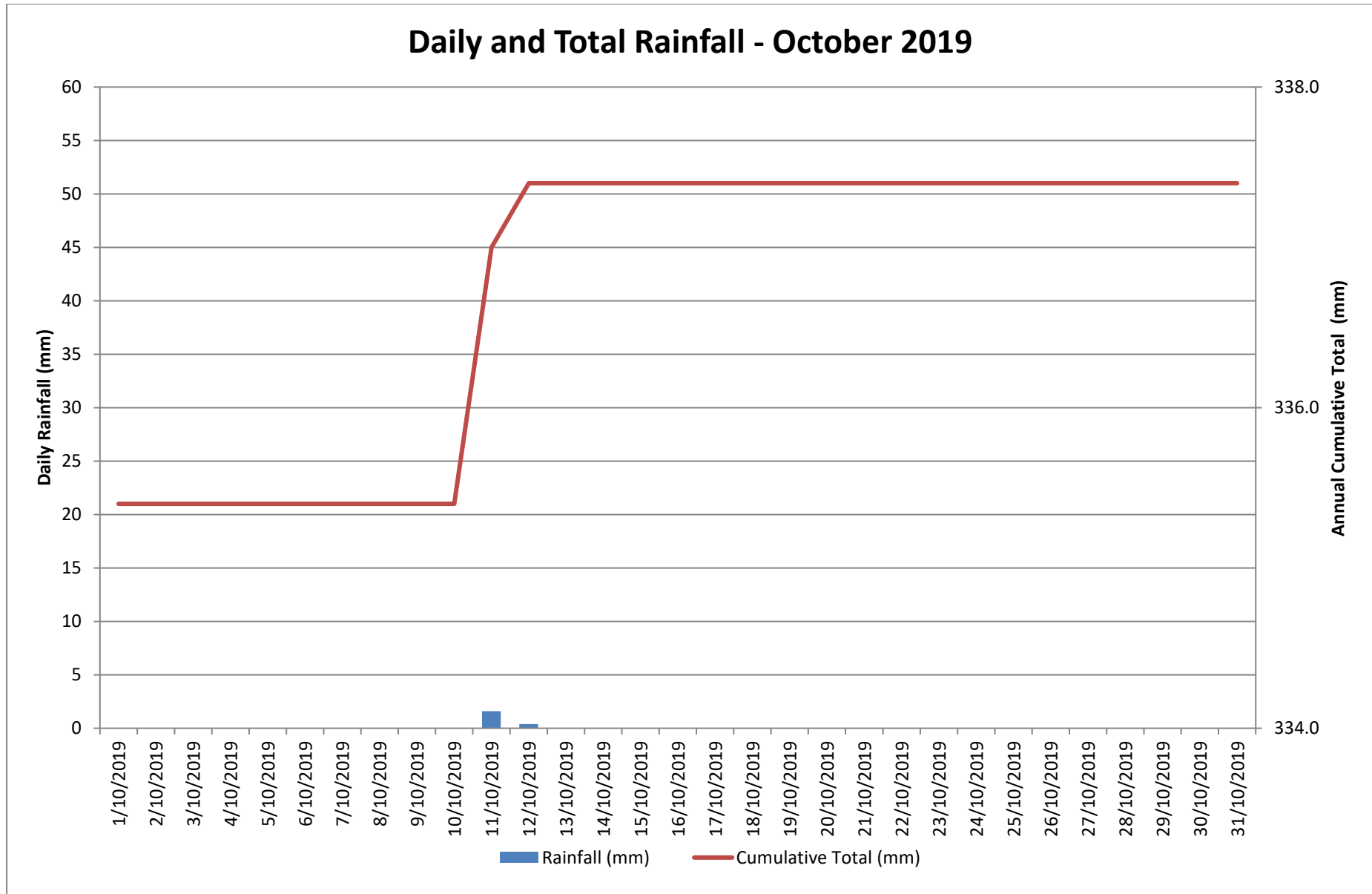
Meteorological Data

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Daily and Total Rainfall - October 2019



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