

**Report Period**

1/06/2023

30/06/2023

**Monthly Monitoring Summary  
for Hodgson Quarries and Plant Pty Ltd  
Roberts Road Sand Quarry, Maroota,  
NSW**



# Site Monitoring Locations





## Groundwater Levels

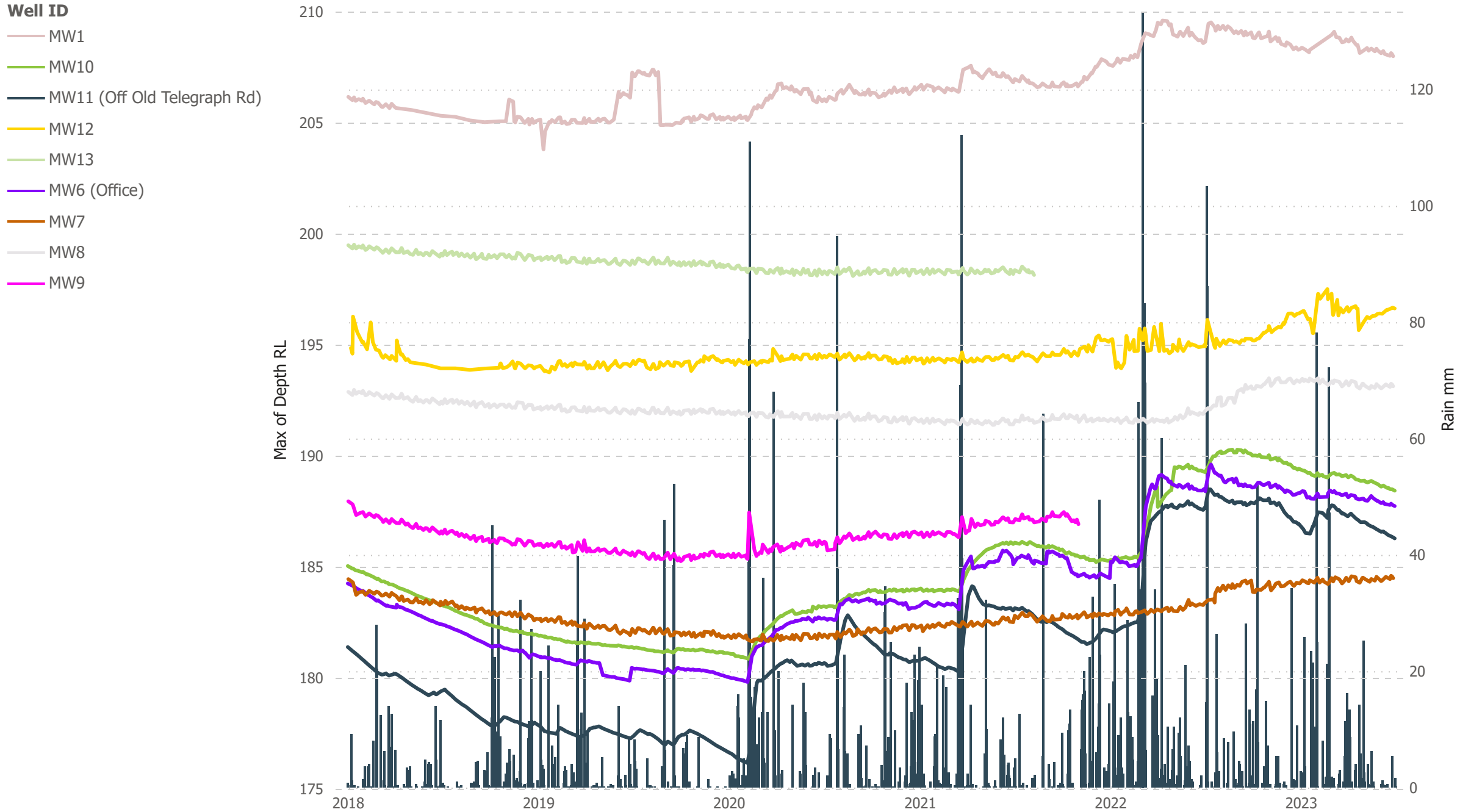
Groundwater levels are currently monitored in nine boreholes located on the site. Groundwater levels are manually measured for depth each month using a groundwater dipper. Data is downloaded from groundwater loggers where present. MW1 logger was installed prior to 2015; the remaining loggers were installed in 2017.

Graph 1 displays the depths as of January 2017. Graph 2 shows depths in the past month. Following anomalous readings from the MW5 logger, the bore was investigated and discovered to have collapsed. The logger was relocated to a functioning bore and the bore abandoned and replaced by nearby MW8.

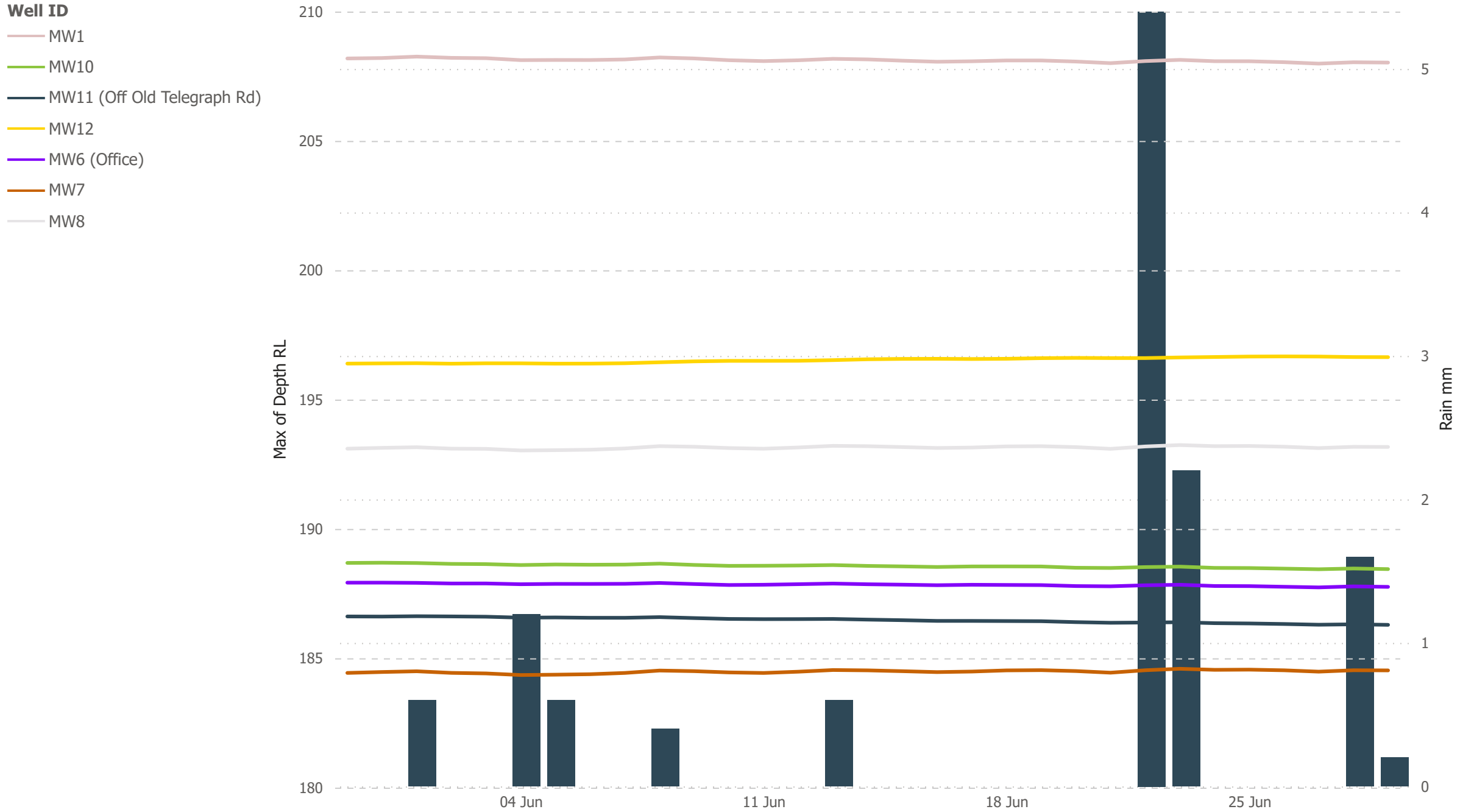
MW1 and MW12 were taken away for repairs during April 2018 and returned in October 2018, hence the gap in reporting on the following graphs.

Due to rain gauge malfunctions, rainfall was not recorded in 2020 until a new weather station was installed onsite 29th May 2020. Where available, daily rainfall received in the interim has been sourced from the Bureau of Meteorology.

**Graph 1: All Groundwater Depths with Rainfall from 1/1/2017**

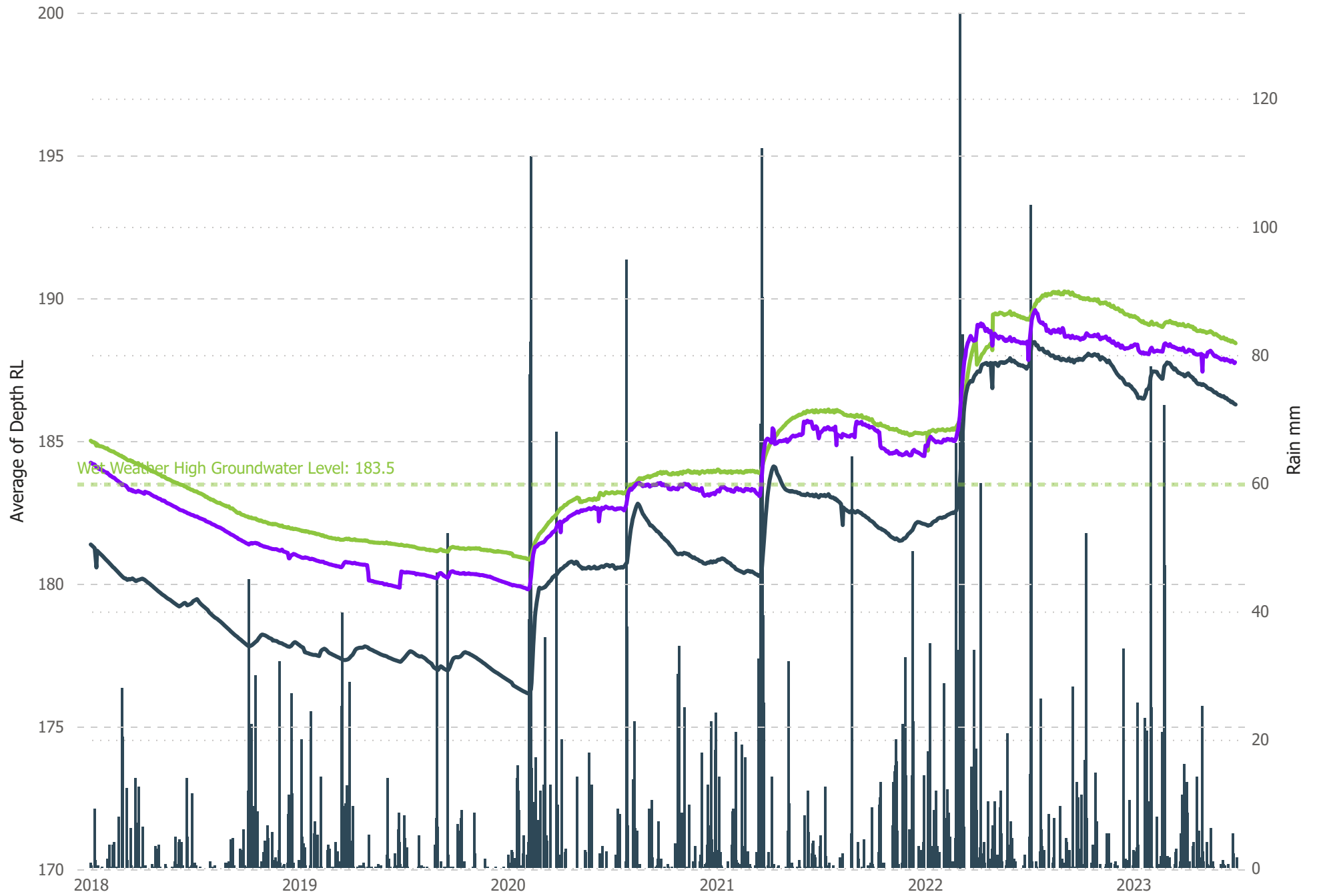


**Graph 2: All Groundwater Depths with Rainfall this month**



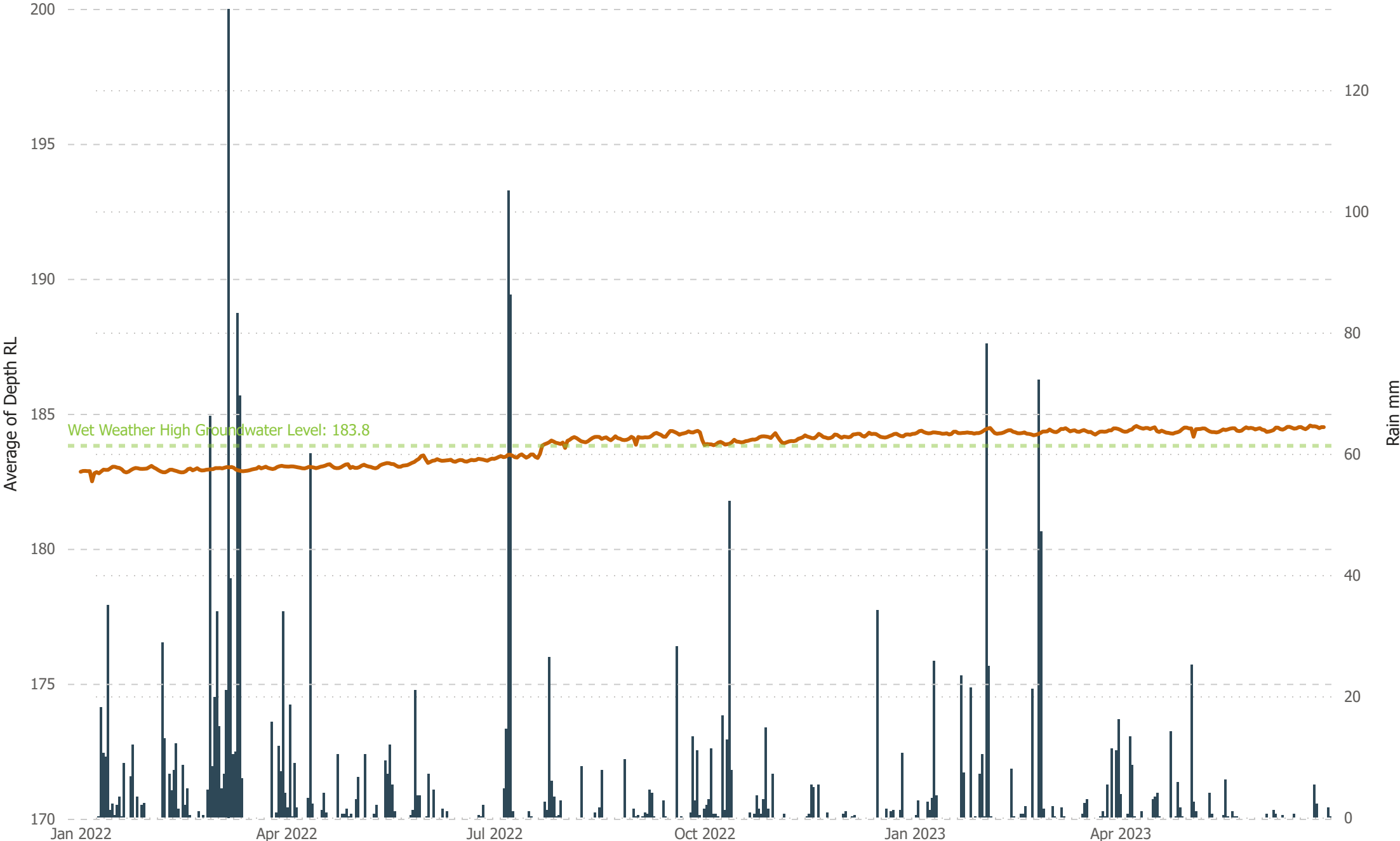
**Graph 3: All Groundwater Depths with Rainfall in Maroota Sand**

- Well ID**
- MW10
  - MW11 (Off Old Telegraph Rd)
  - MW6 (Office)



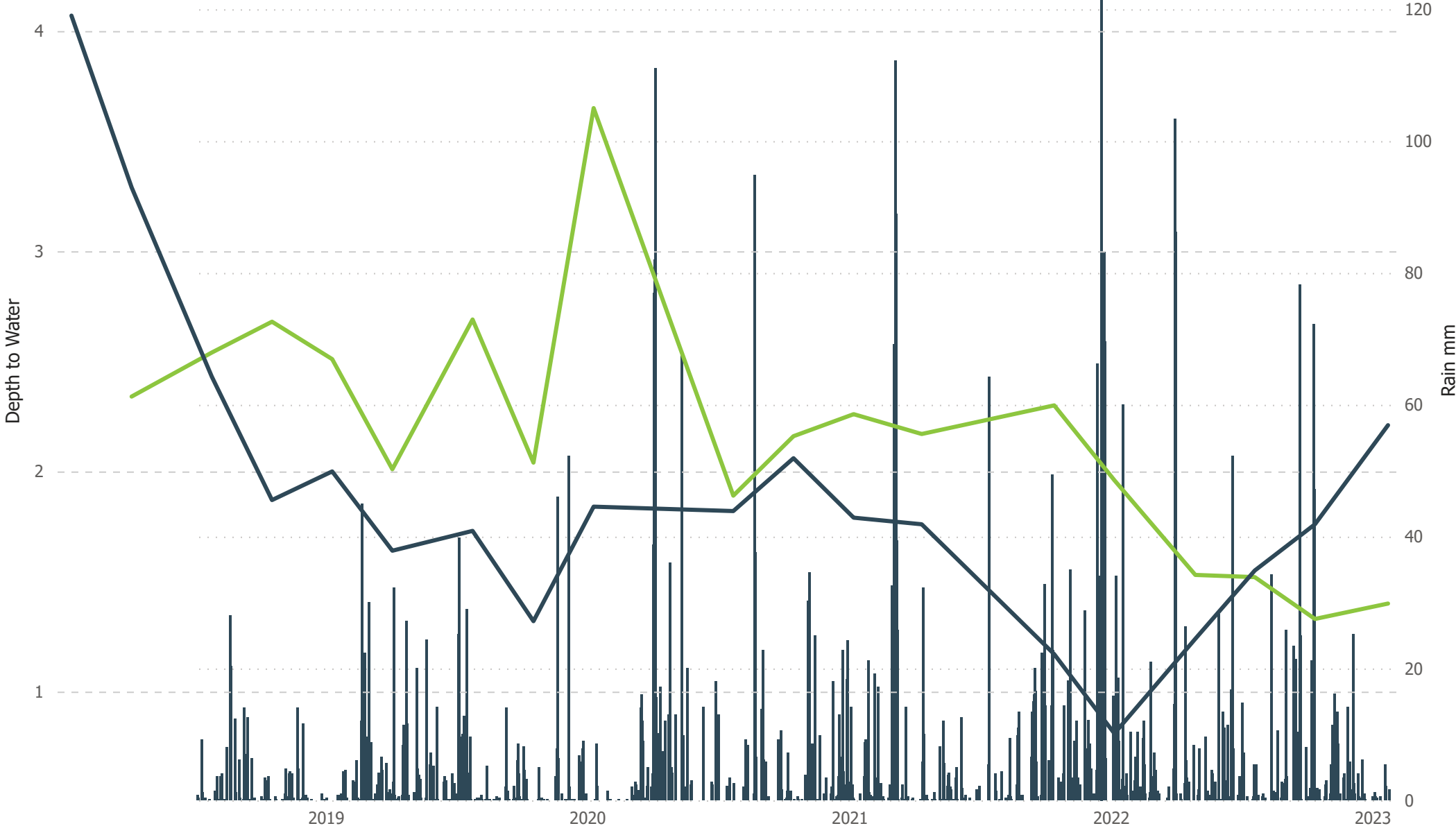
**Graph 4: All Groundwater Depths with Rainfall in Hawkesbury Sandstone**

Well ID  
MW7



**Graph 5: Surface Water Depths with Rainfall**

**Sample**  
— Dam 1 - Process  
— Dam 2 - Tailings





## **Weather Station Monitoring**

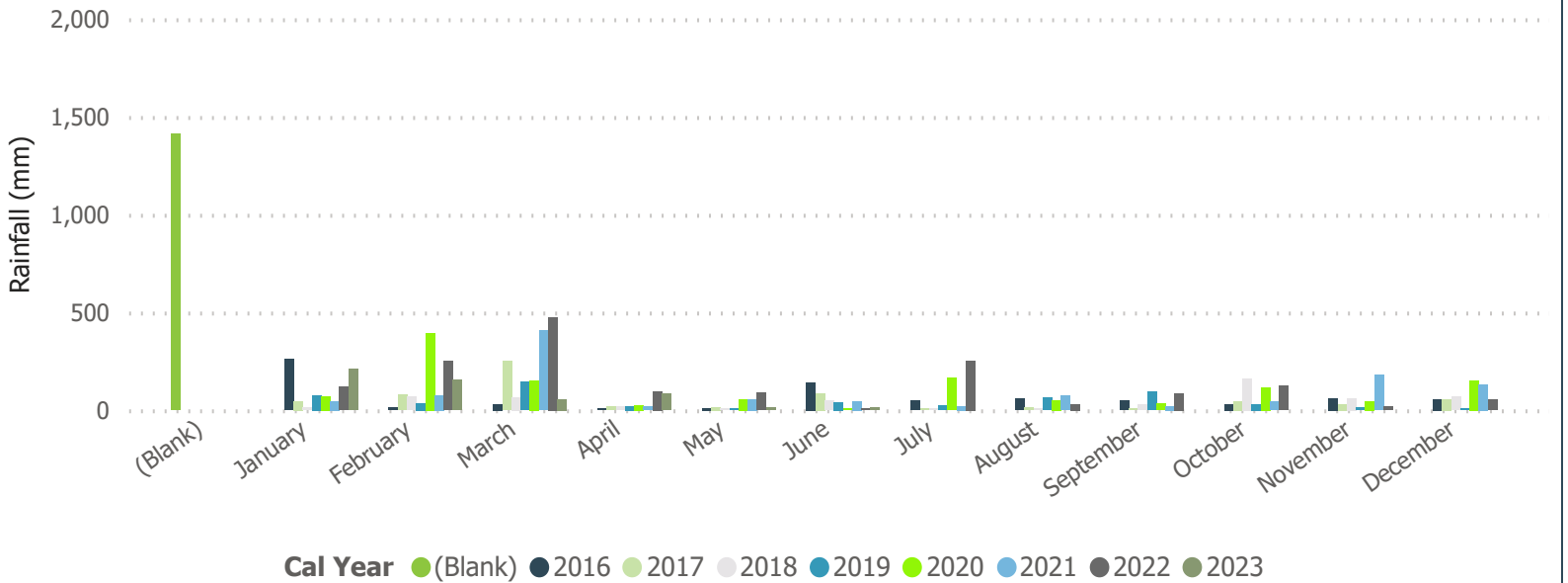
Due to gauge malfunctions, rainfall was not recorded in 2020 until a new weather station was installed onsite 29th May 2020. Where available, daily rainfall received in the interim was been sourced from the Bureau of Meteorology. Temperature monitoring during that period also shows gaps in the data. For modelling and reporting, Bureau of Meteorology averages were used

# Weather Trends

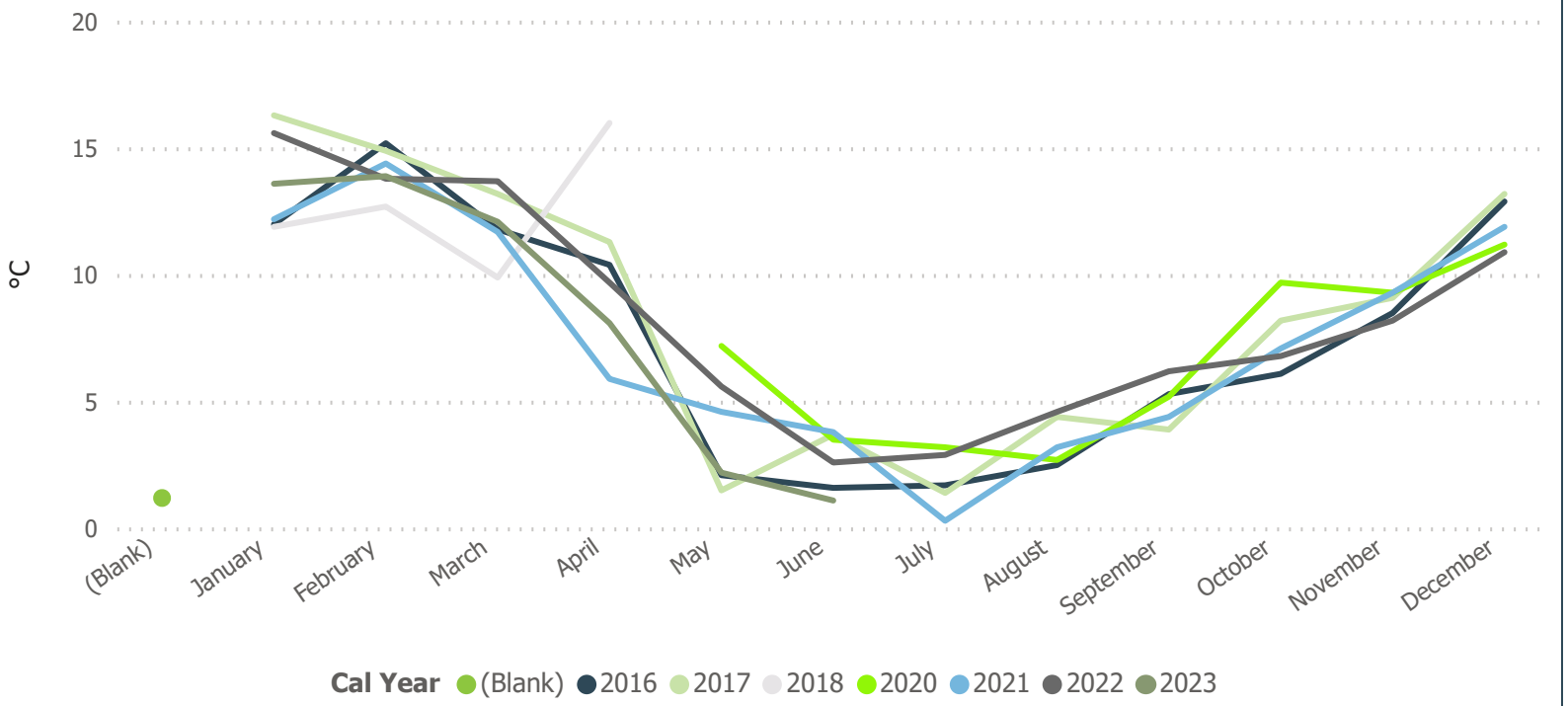
1/01/2016

29/06/2023

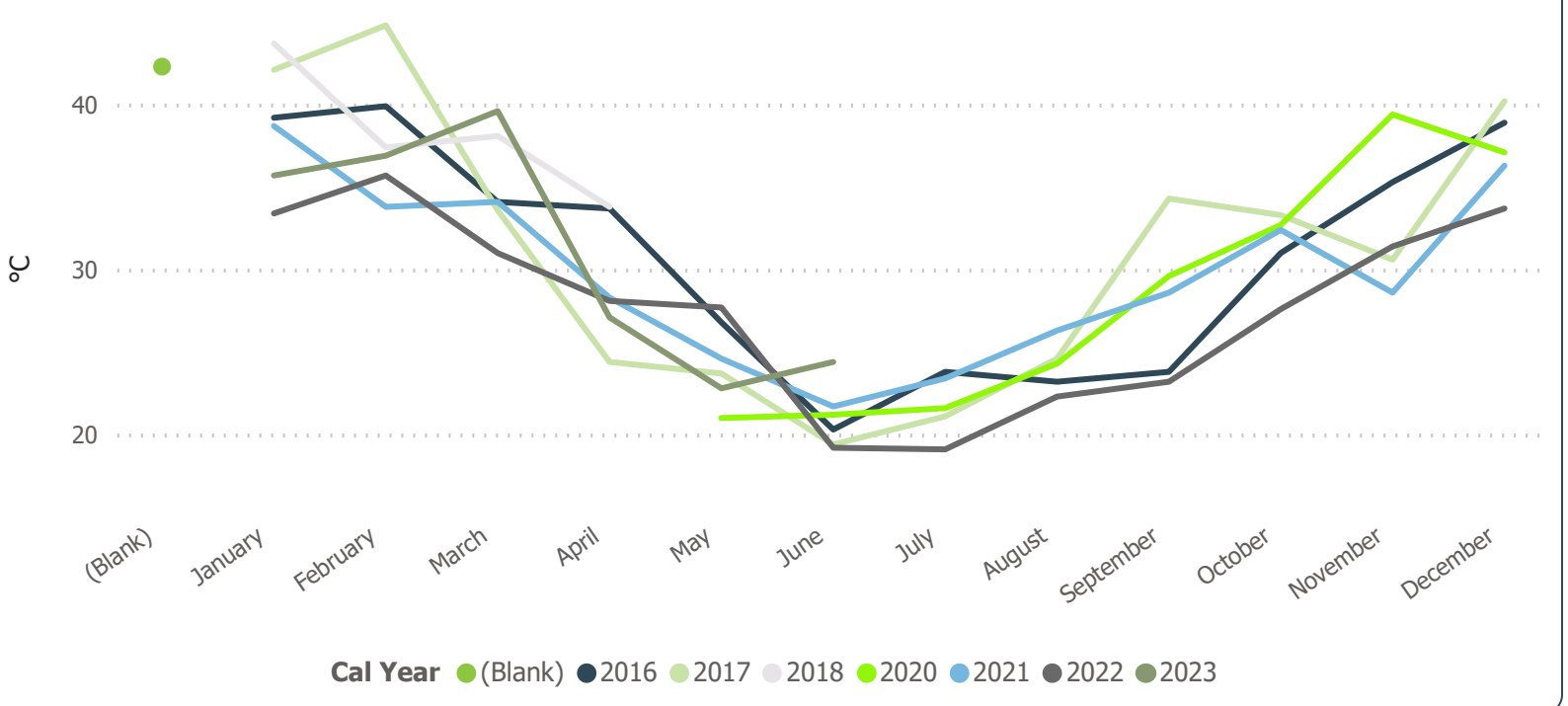
## Precipitation



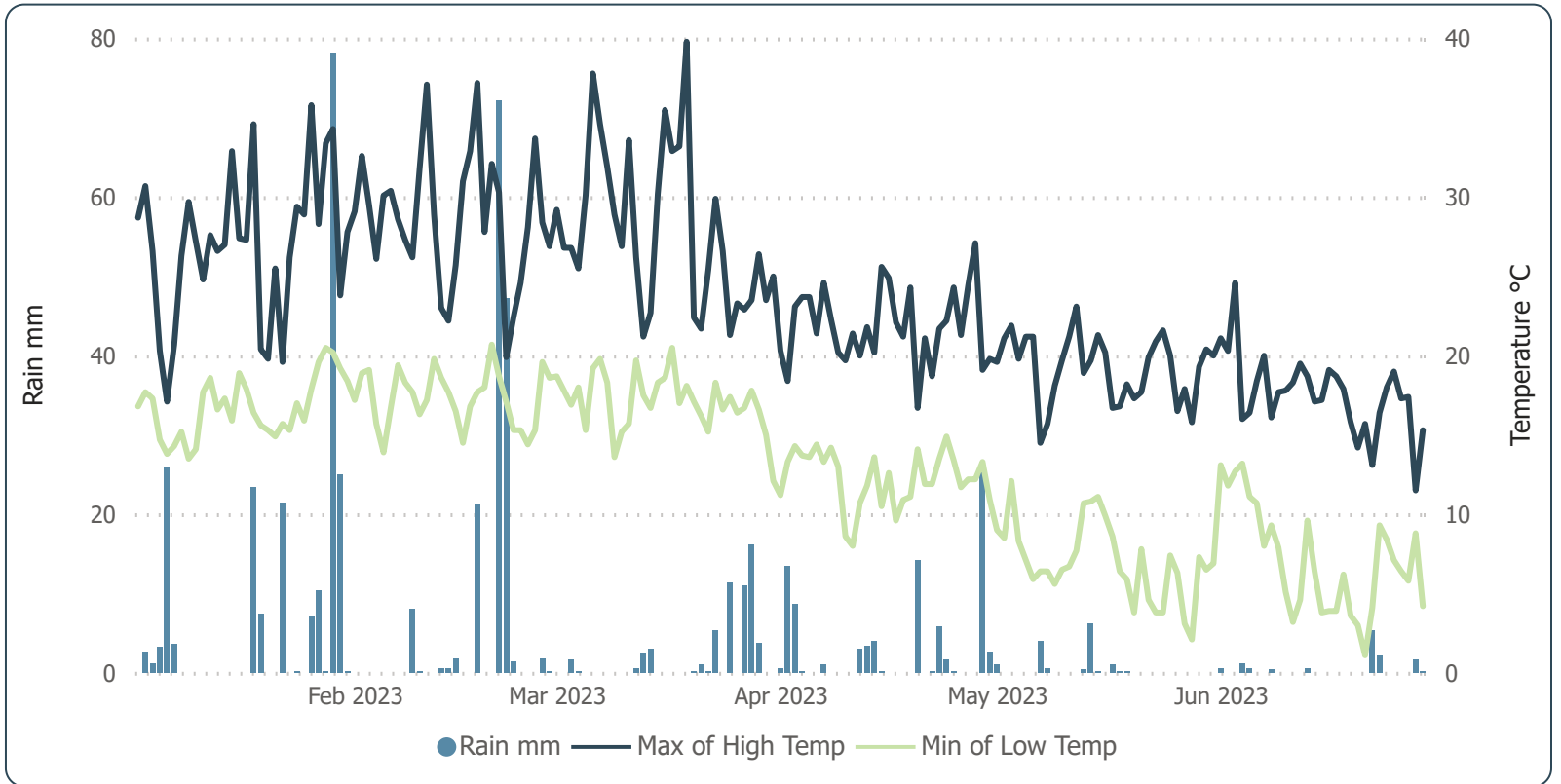
## Minimum Temperature



## Maximum Temperature



## Weather Detail for last 6 months



### Precipitation mm

Cal Year	January	February	March	April	May	June	Total
2023	210.0	155.2	57.0	84.2	13.8	12.8	<b>533.0</b>
<b>Total</b>	<b>210.0</b>	<b>155.2</b>	<b>57.0</b>	<b>84.2</b>	<b>13.8</b>	<b>12.8</b>	<b>533.0</b>

### Minimum Temperature °C

Cal Year	January	February	March	April	May	June	Total
2023	13.6	13.9	12.1	8.1	2.2	1.1	<b>1.1</b>
<b>Total</b>	<b>13.6</b>	<b>13.9</b>	<b>12.1</b>	<b>8.1</b>	<b>2.2</b>	<b>1.1</b>	<b>1.1</b>

### Average Temperature °C

Cal Year	January	February	March	April	May	June	Total
2023	20.9	22.1	21.6	16.5	12.6	11.8	<b>17.6</b>
<b>Total</b>	<b>20.9</b>	<b>22.1</b>	<b>21.6</b>	<b>16.5</b>	<b>12.6</b>	<b>11.8</b>	<b>17.6</b>

### Maximum Temperature °C

Cal Year	January	February	March	April	May	June	Total
2023	35.7	36.9	39.6	27.1	22.8	24.4	<b>39.6</b>
<b>Total</b>	<b>35.7</b>	<b>36.9</b>	<b>39.6</b>	<b>27.1</b>	<b>22.8</b>	<b>24.4</b>	<b>39.6</b>

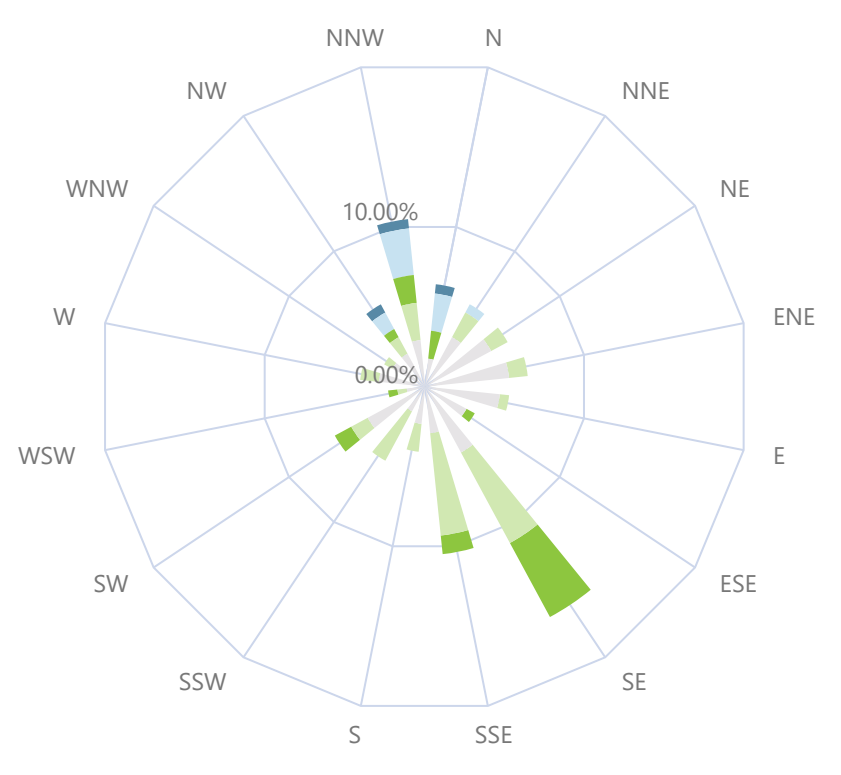
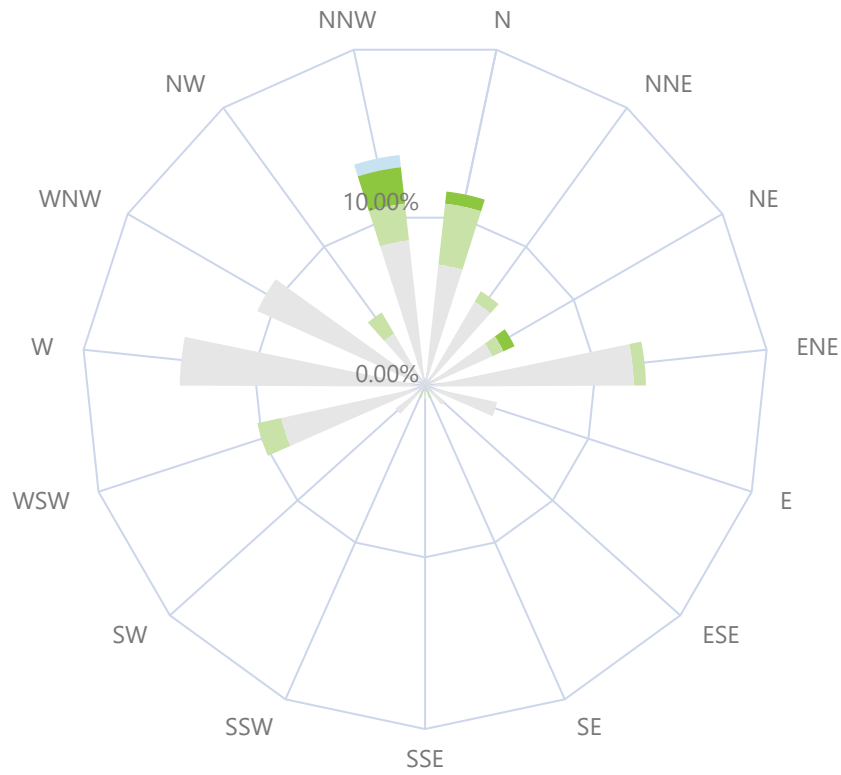
# Wind Rose for Last 6 Months

**9 am**

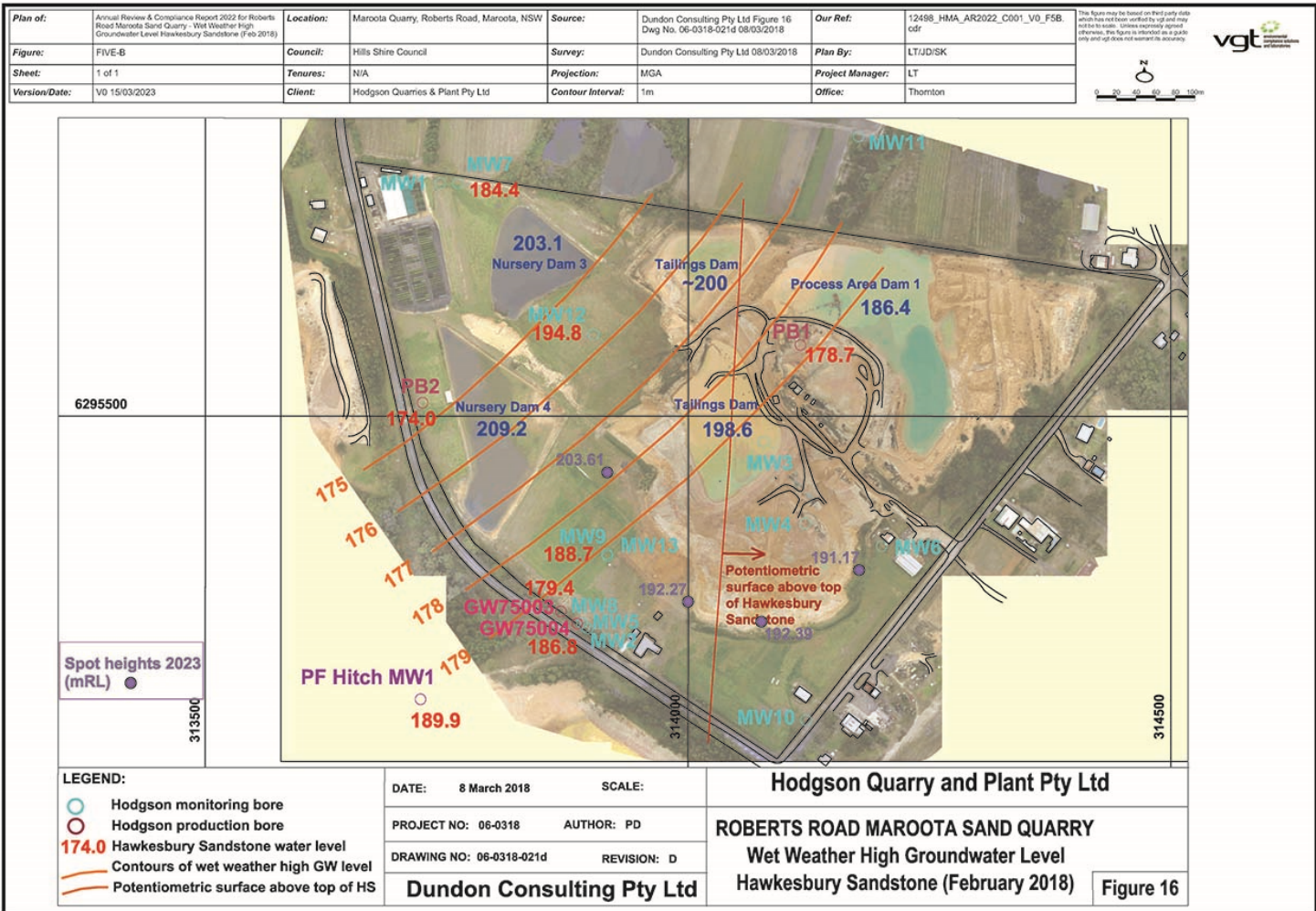
**3 pm**

Wind Speed Groups

> 0-5 km/h > 5-10 km/h > 10-15 km/h > 15-20 km/h > 20-25 Km/h > 25-30 Km/h > 30+ Km/h









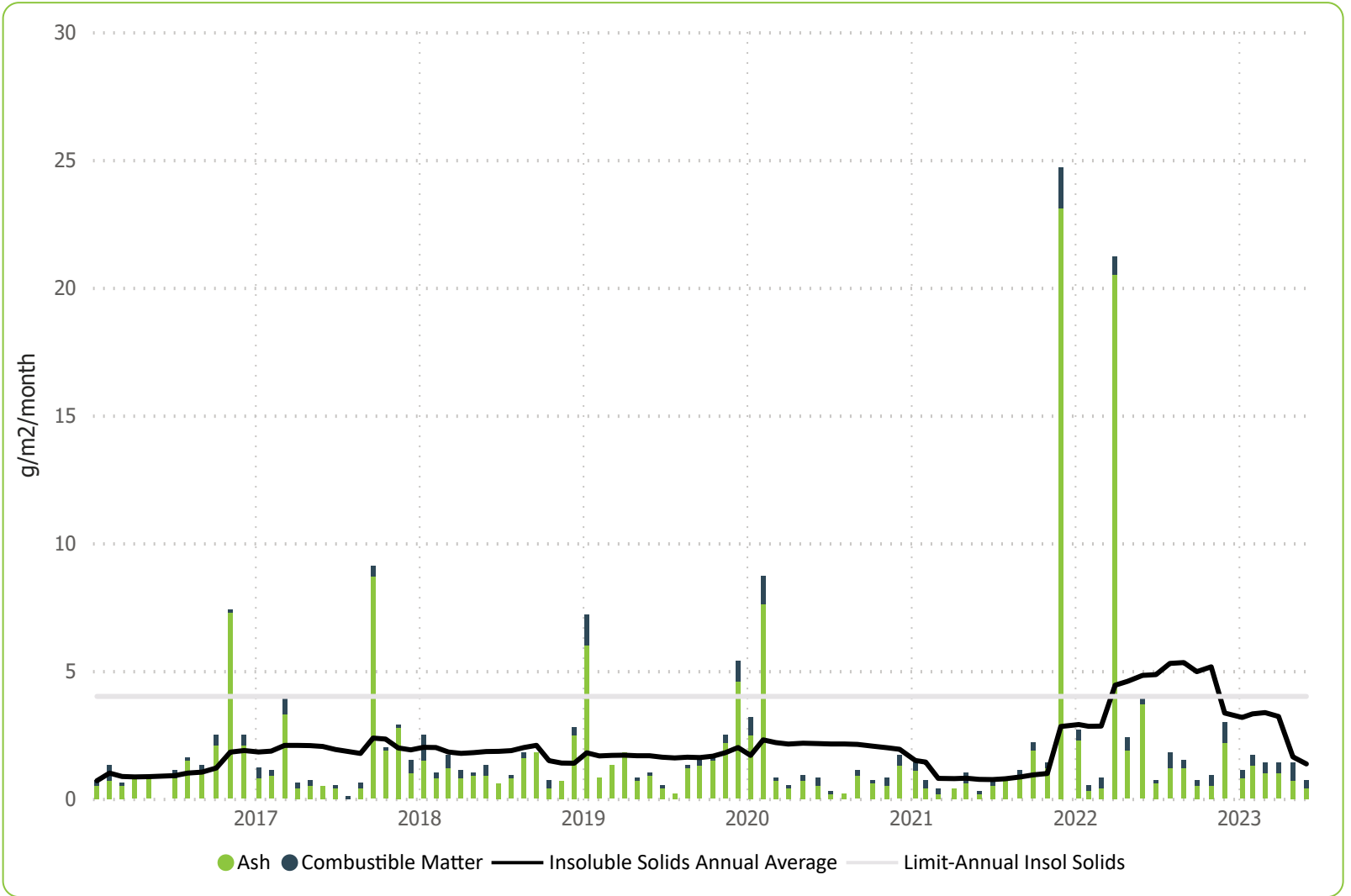
# **Depositional Dust and Particulate Matter Monitoring**

# Depositional Dusts last 12 months

D1 Gate



**Insoluble Solids  
Annual Average  
g/m2/month**



Date On	Comments
1/07/22	Sampled by Melissa Mass. Flooding rainfall event during July.
1/08/22	Sampled by Melissa Mass.
1/09/22	Sampled by Melissa Mass.
30/09/22	Sampled by Melissa Mass.
1/11/22	Sampled by Melissa Mass.
1/12/22	Sampled by Melissa Mass.
9/01/23	
1/02/23	Sampled by M.Mass
1/03/23	Sampled by M.Mass
31/03/23	Sampled by M.Mass
2/05/23	Sampled by M.Mass.
1/06/23	Sampled by M.Mass.

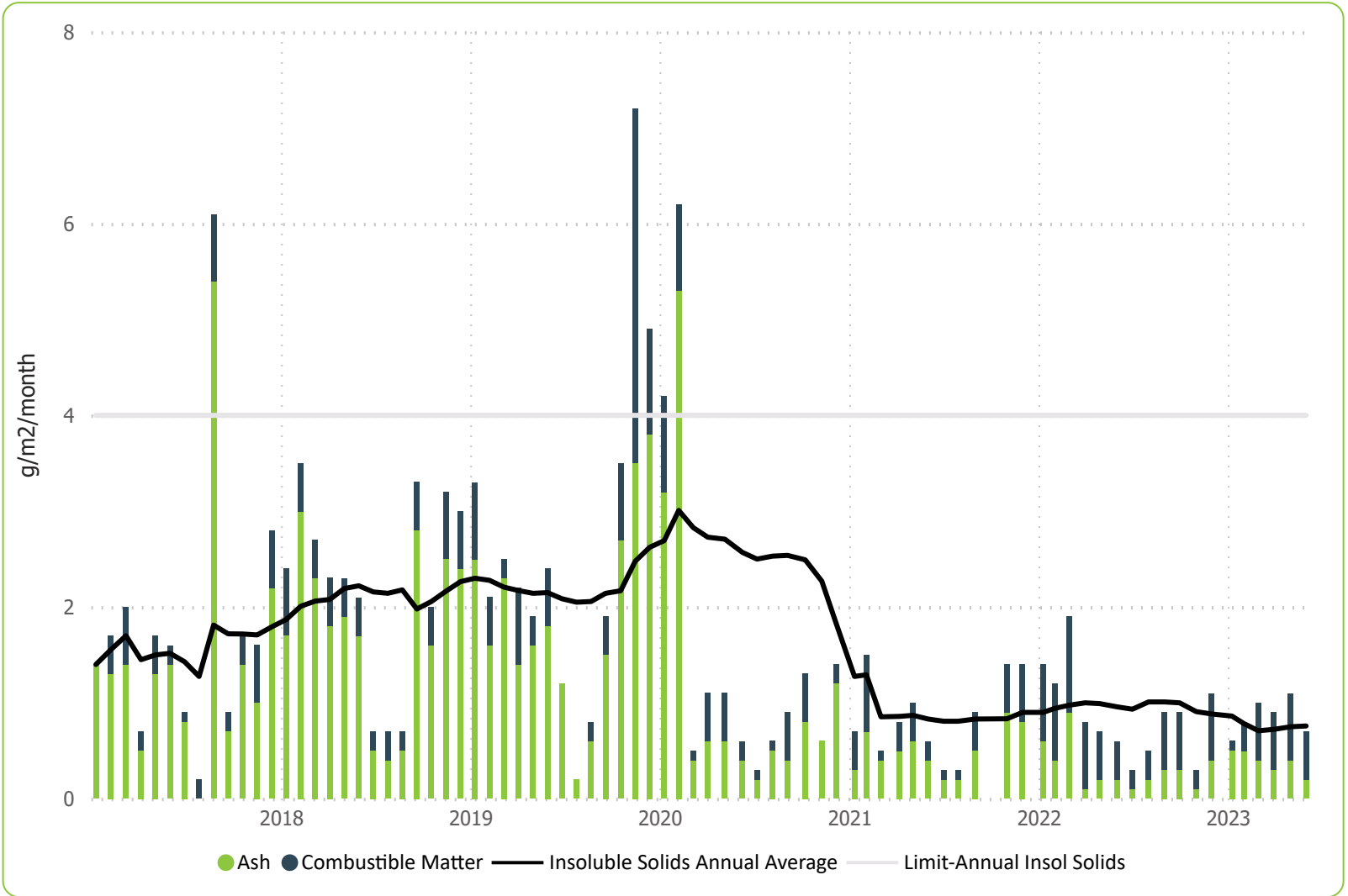
Date Sampled	Days On	Insoluble Solids	Ash	Combustible Matter	Calculated Rain
1/8/22	31	1.8	1.2	0.6	114
1/9/22	31	1.5	1.2	0.3	32
30/9/22	29	0.7	0.5	0.2	64
1/11/22	32	0.9	0.5	0.4	114
1/12/22	30	3.0	2.2	0.8	27
9/1/23	39	1.1	0.8	0.3	91
1/2/23	23	1.7	1.3	0.4	114
1/3/23	28	1.4	1.0	0.4	115
31/3/23	30	1.4	1.0	0.4	59
2/5/23	32	1.4	0.7	0.7	86
1/6/23	30	0.7	0.4	0.3	18
30/6/23	29	1.2	1.1	0.1	16

# Depositional Dusts last 12 months

D2 North East Corner



## Insoluble Solids Annual Average g/m2/month



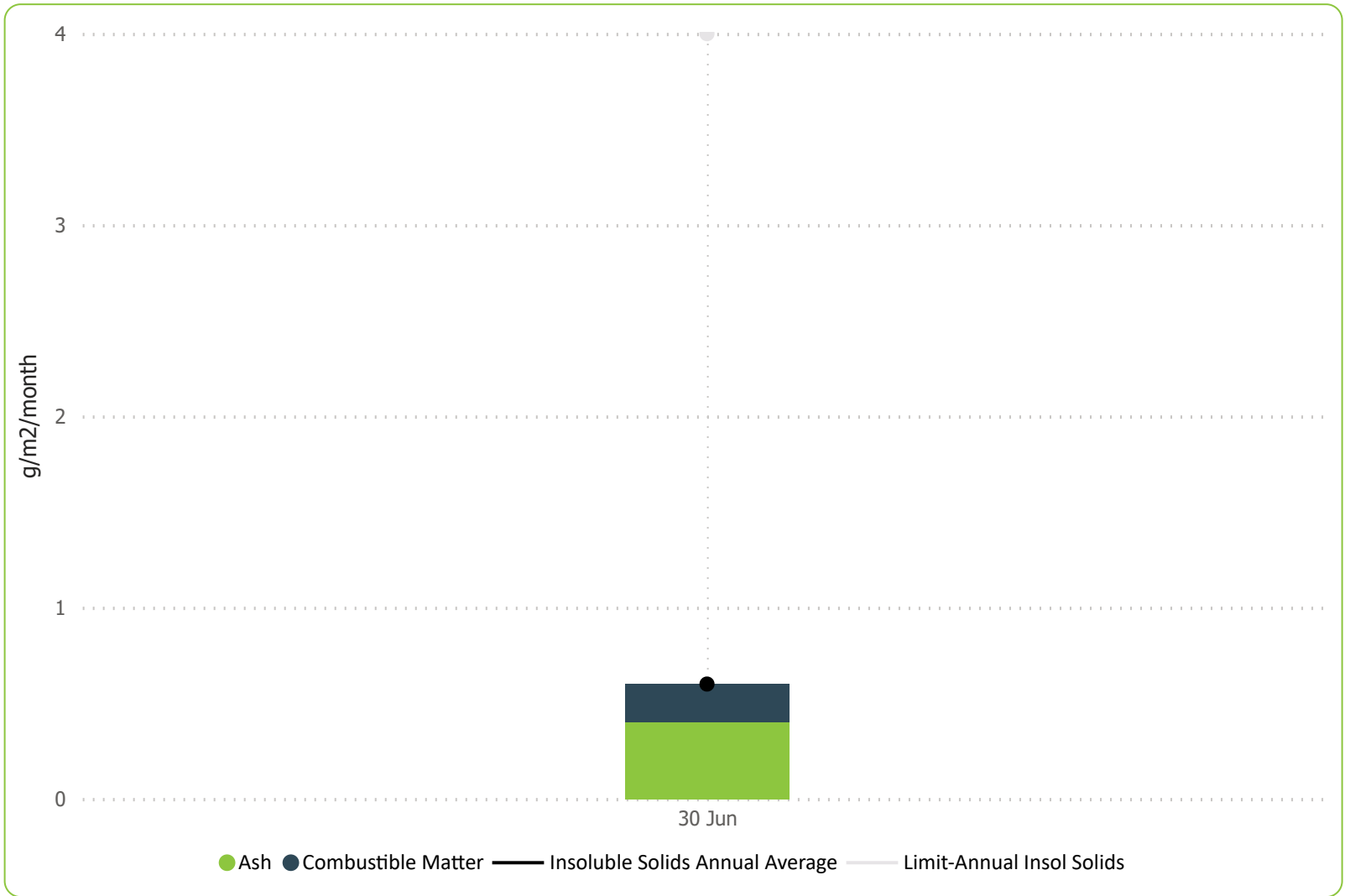
Date On	Comments	Date Sampled	Days On	Insoluble Solids	Ash	Combustible Matter	Calculated Rain
1/07/22	Sampled by Melissa Mass. Flooding rainfall event during July.	1/8/22	31	0.5	0.2	0.3	115
1/08/22	Sampled by Melissa Mass.	1/9/22	31	0.9	0.3	0.6	26
1/09/22	Sampled by Melissa Mass.	30/9/22	29	0.9	0.3	0.6	72
30/09/22	Sampled by Melissa Mass.	1/11/22	32	0.3	0.1	0.2	114
1/11/22	Sampled by Melissa Mass.	1/12/22	30	1.1	0.4	0.7	20
1/12/22	Sampled by Melissa Mass.	9/1/23	39	0.6	0.5	0.1	68
9/01/23		1/2/23	23	0.8	0.5	0.3	114
1/02/23	Sampled by M.Mass	1/3/23	28	1.0	0.4	0.6	114
1/03/23	Sampled by M.Mass. Not compliant - Clear sky/ 10m from obstacle	31/3/23	30	0.9	0.3	0.6	47
31/03/23	Sampled by M.Mass.	2/5/23	32	1.1	0.4	0.7	67
2/05/23	Sampled by M.Mass.	1/6/23	30	0.7	0.2	0.5	12

# Depositional Dusts last 12 months

D2a North East Corner



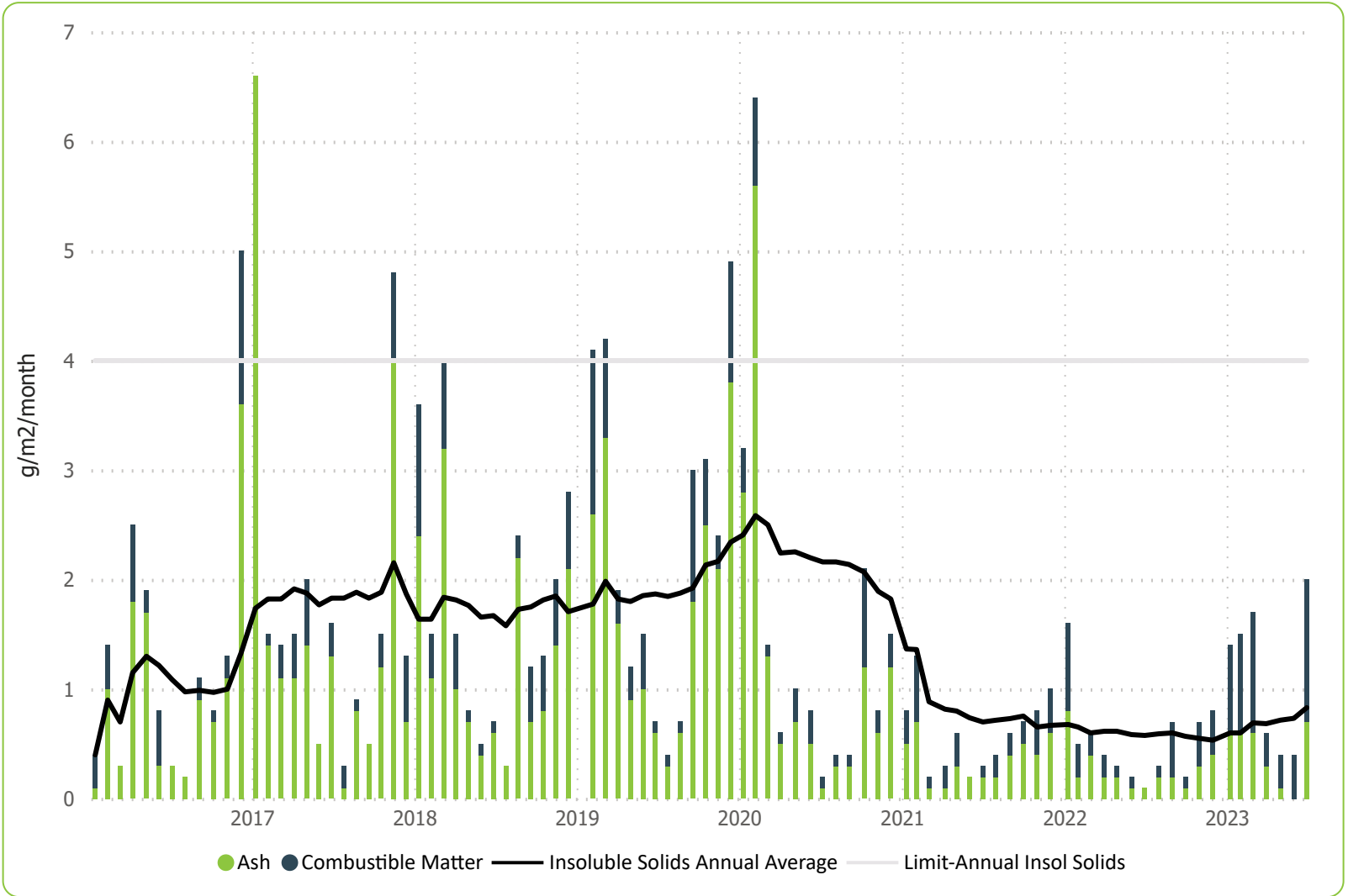
## Insoluble Solids Annual Average g/m2/month



Date On	Comments	Date Sampled	Days On	Insoluble Solids	Ash	Combustible Matter	Calculated Rain
1/06/23	Sampled by M.Mass.	30/6/23	29	0.6	0.4	0.2	9



**Insoluble Solids  
Annual Average  
g/m2/month**

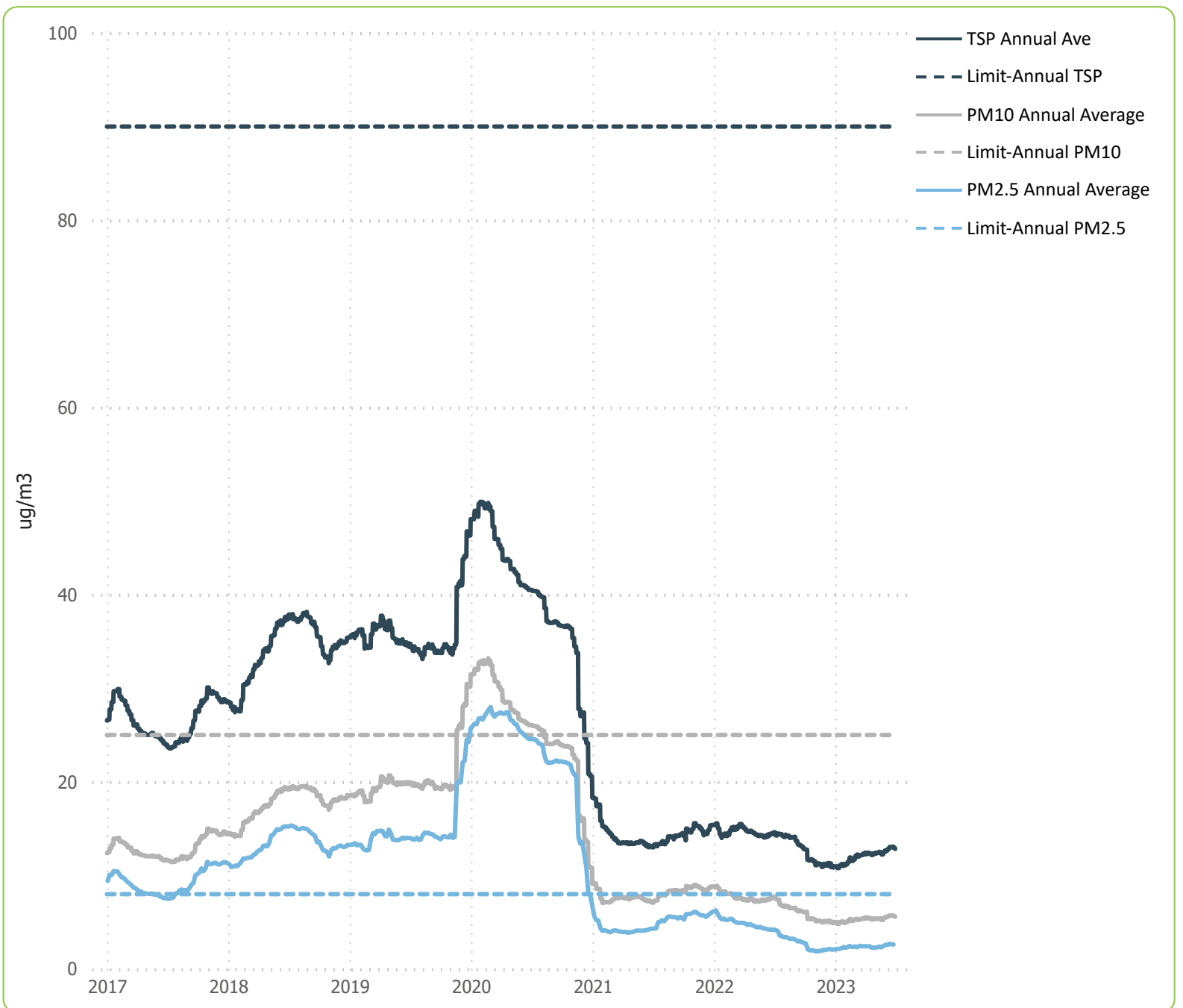
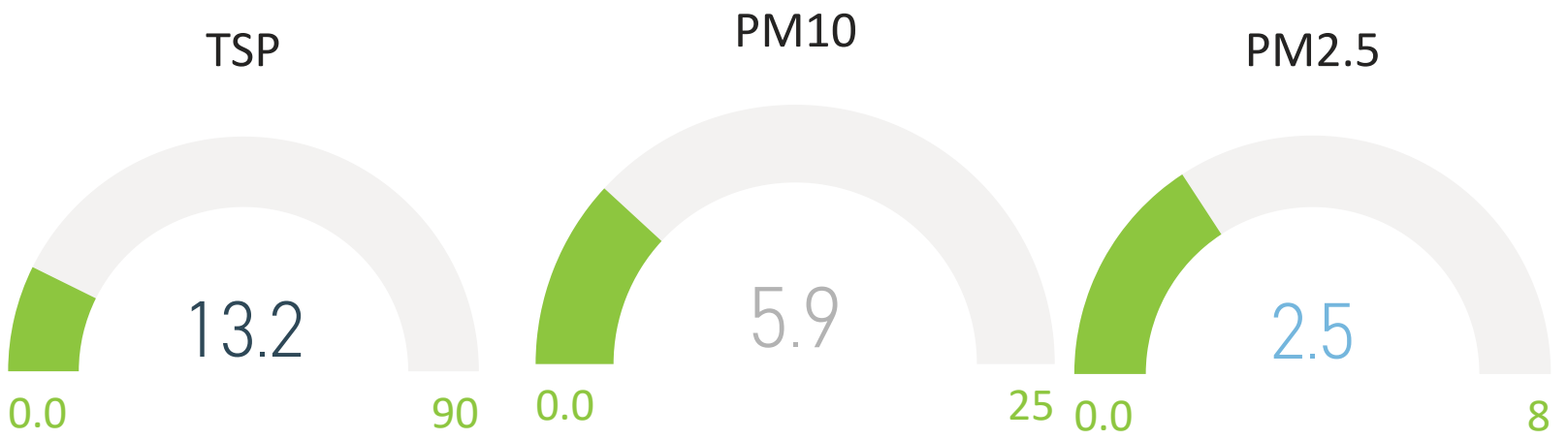


Date On	Comments
1/07/22	Sampled by Melissa Mass. Flooding rainfall event during July.
1/08/22	Sampled by Melissa Mass.
1/09/22	Sampled by Melissa Mass.
30/09/22	Sampled by Melissa Mass.
1/11/22	Sampled by Melissa Mass.
1/12/22	Sampled by Melissa Mass.
9/01/23	
1/02/23	Sampled by M.Mass
1/03/23	Sampled by M.Mass
31/03/23	Sampled by M.Mass
2/05/23	Sampled by M.Mass.
1/06/23	Sampled by M.Mass.

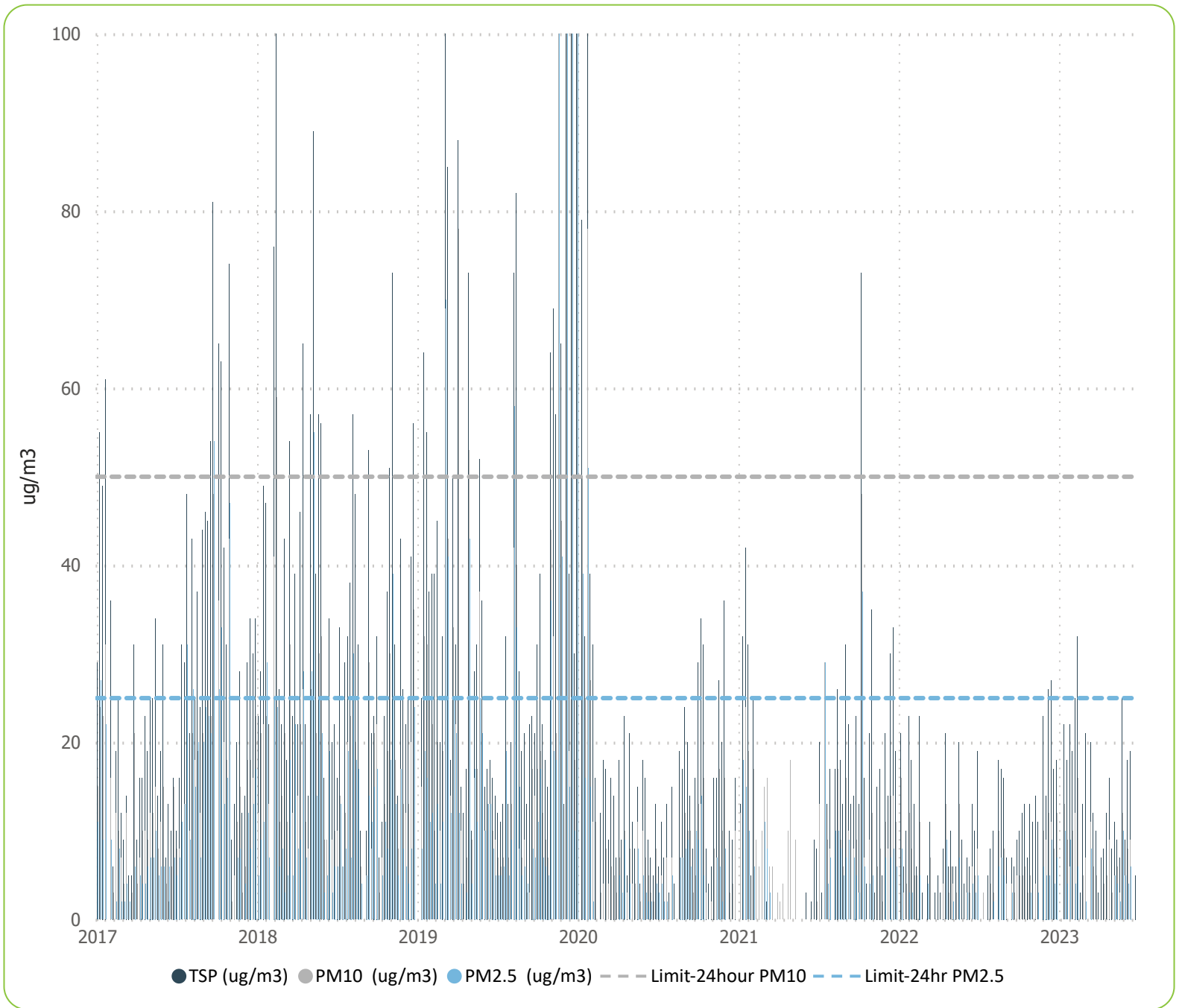
Date Sampled	Days On	Insoluble Solids	Ash	Combustible Matter	Calculated Rain
1/8/22	31	0.3	0.2	0.1	114
1/9/22	31	0.7	0.2	0.5	31
30/9/22	29	0.2	0.1	0.1	82
1/11/22	32	0.7	0.3	0.4	109
1/12/22	30	0.8	0.4	0.4	28
9/1/23	39	1.4	0.6	0.8	83
1/2/23	23	1.5	0.6	0.9	115
1/3/23	28	1.7	0.6	1.1	115
31/3/23	30	0.6	0.3	0.3	55
2/5/23	32	0.4	0.1	0.3	82
1/6/23	30	0.4	0.0	0.4	19
30/6/23	29	2.0	0.7	1.3	16



# Particulate Matter Annual Averages ( $\mu\text{g}/\text{m}^3$ )



# Particulate Matter 24 Hour Averages ( $\mu\text{g}/\text{m}^3$ )



## PM10 24 hour exceedances ( $>50 \mu\text{g}/\text{m}^3$ )

Date PM10 ( $\mu\text{g}/\text{m}^3$ ) Sampling Comments

---

## PM2.5 24 hour exceedances ( $>25 \mu\text{g}/\text{m}^3$ )

Date PM2.5 ( $\mu\text{g}/\text{m}^3$ ) Sampling Comments

---