

Report Period 

1/11/2023

1/12/2023

**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.

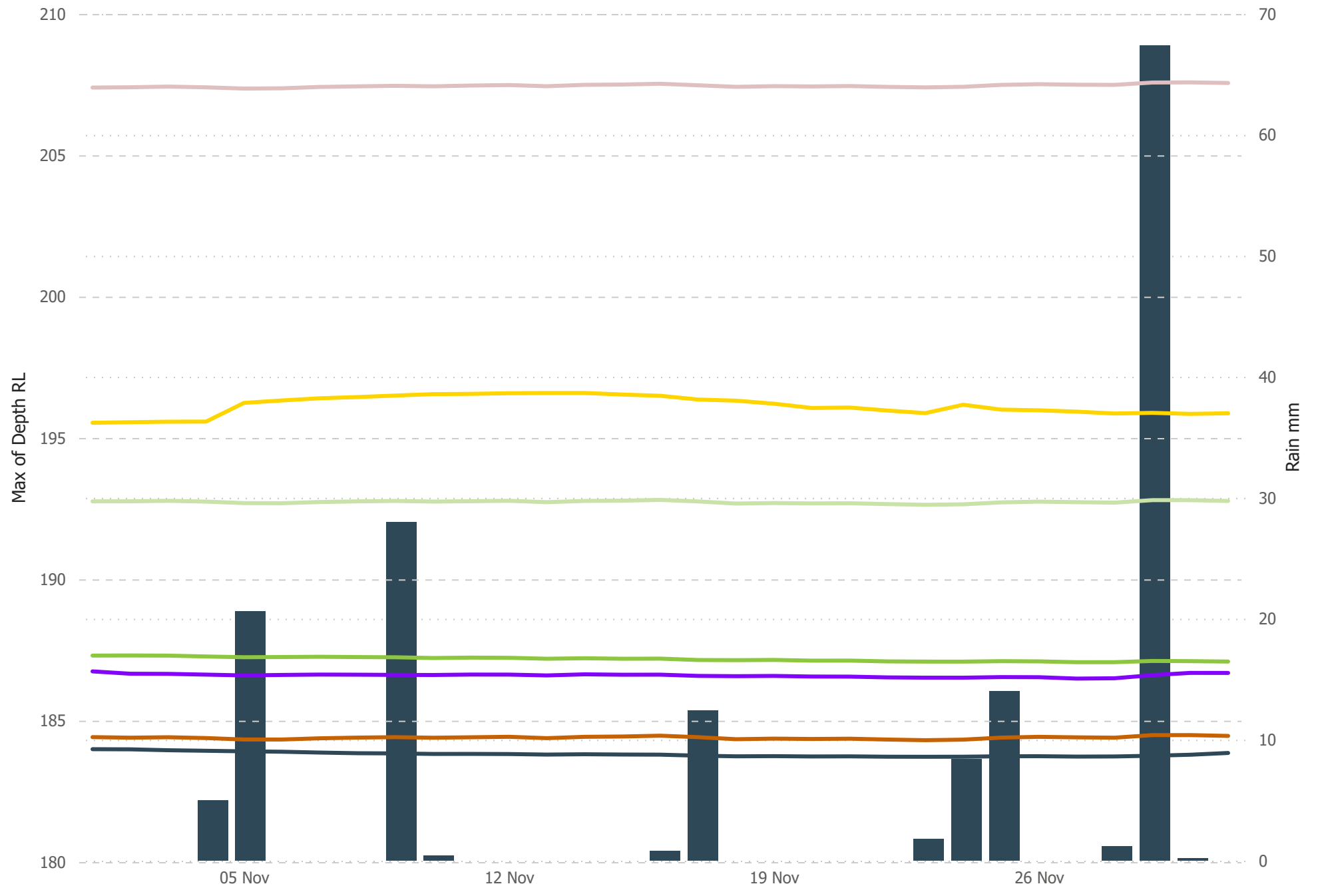
Graph 1 displays the depths as of January 2017. Graph 2 shows depths in the past month. Following anomalous readings from the MW5 logger, the bore was investigated and discovered to have collapsed. The logger was relocated to a functioning bore and the bore abandoned and replaced by nearby MW8.

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.

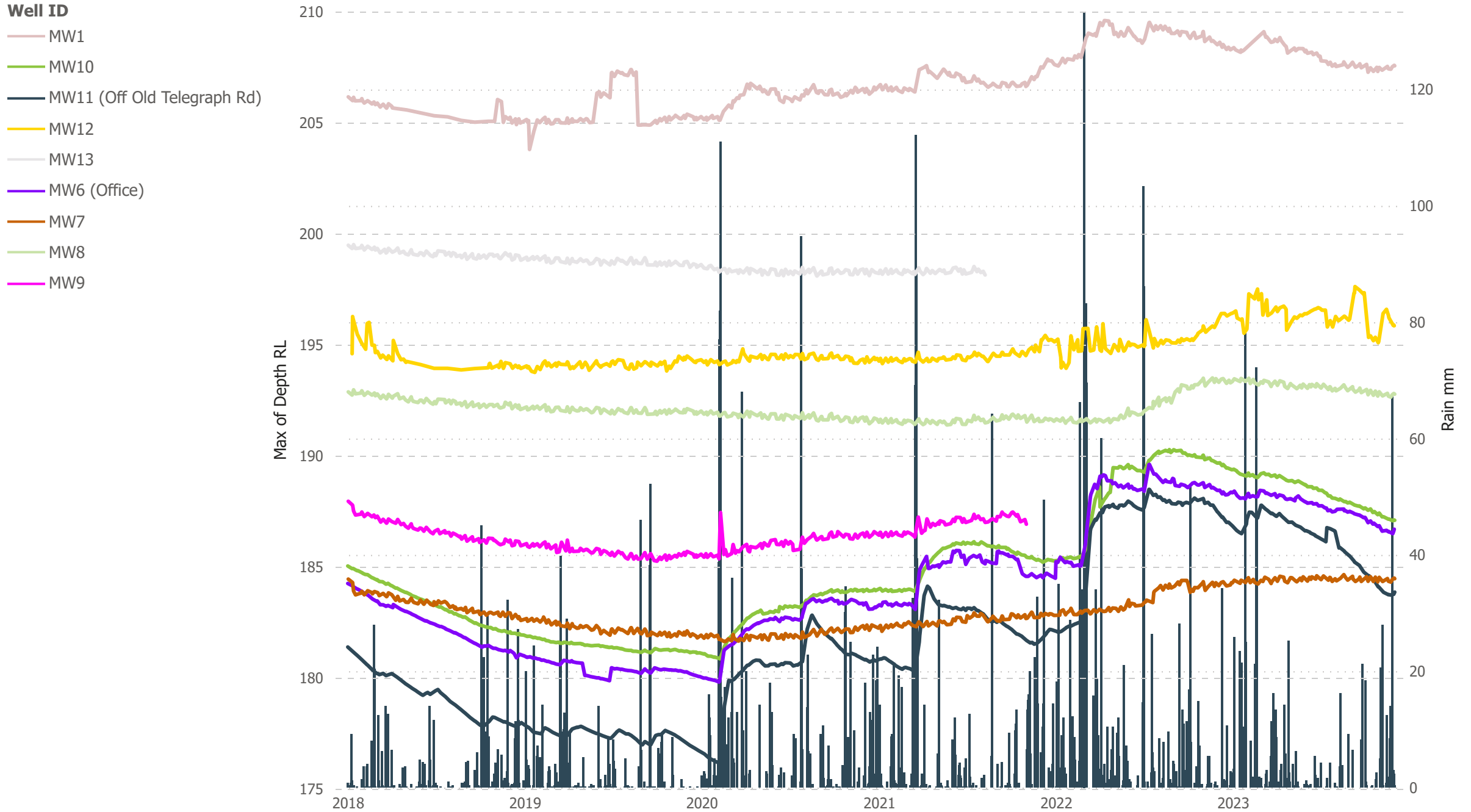
Due to rain gauge malfunctions, rainfall was not recorded in 2020 until a new weather station was installed onsite 29th May 2020. Where available, daily rainfall received in the interim has been sourced from the Bureau of Meteorology.

Graph 2: All Groundwater Depths with Rainfall this month

- Well ID**
- MW1
 - MW10
 - MW11 (Off Old Telegraph Rd)
 - MW12
 - MW6 (Office)
 - MW7
 - MW8

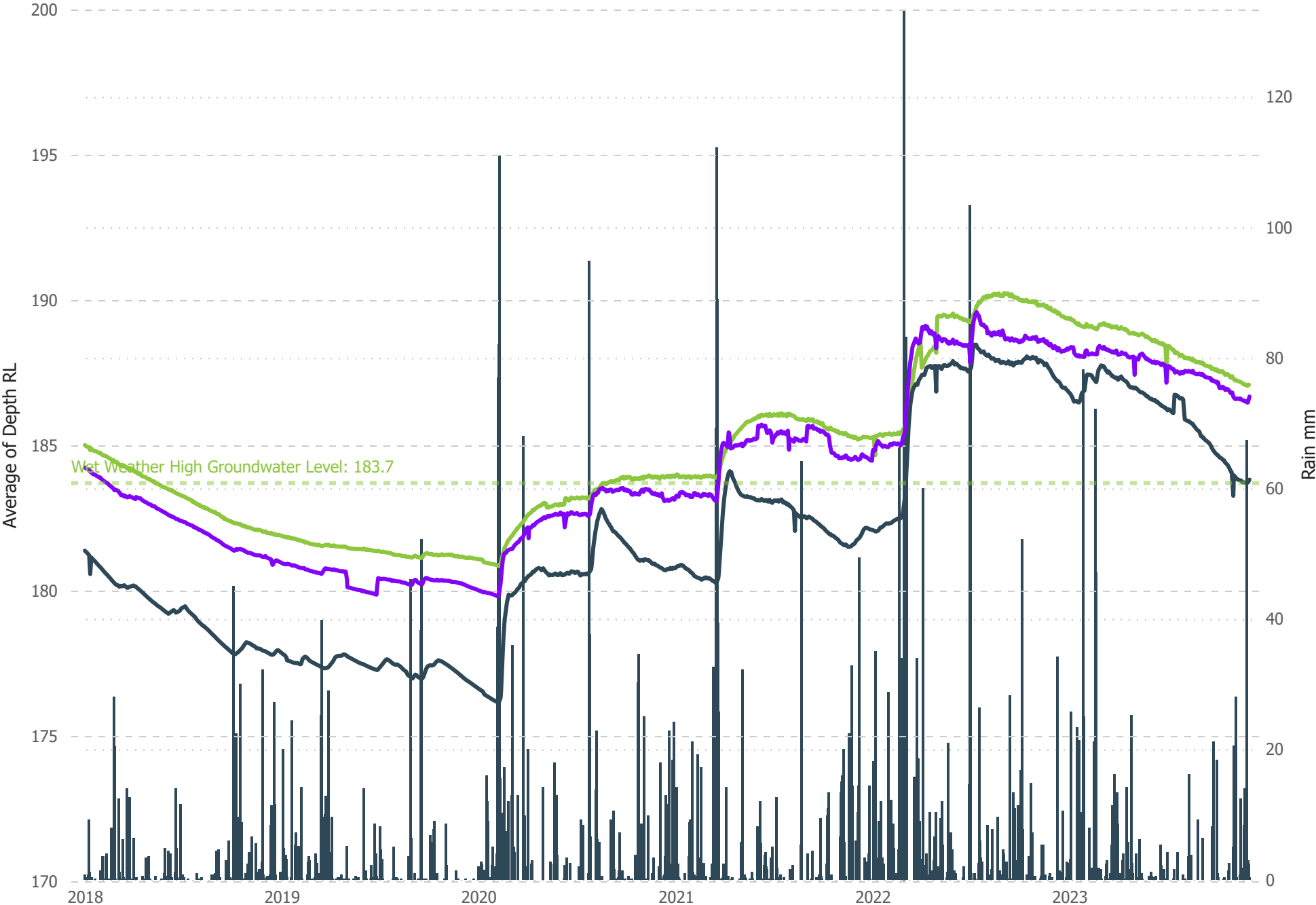


Graph 1: All Groundwater Depths with Rainfall from 1/1/2017

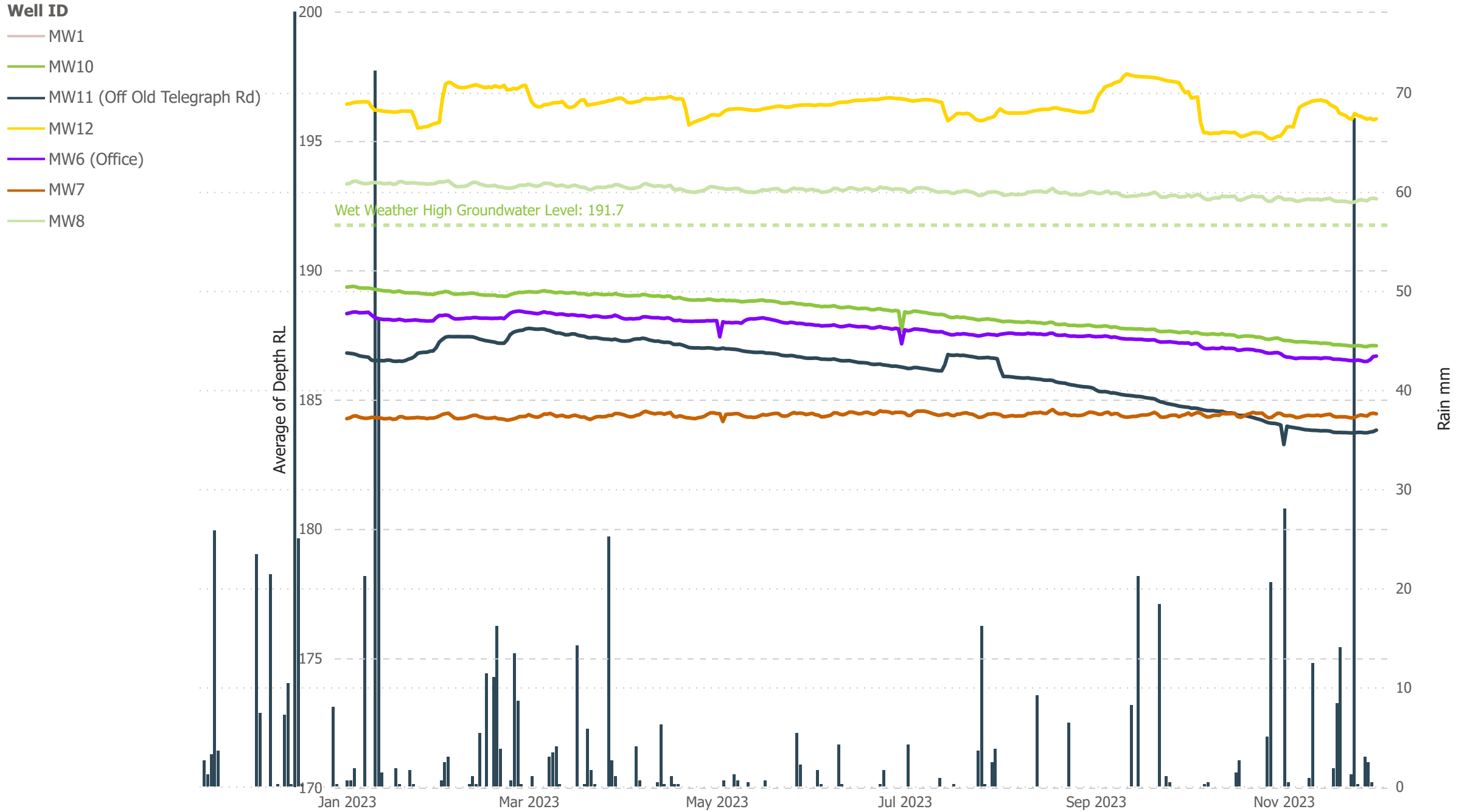


Graph 3: All Groundwater Depths with Rainfall in Maroota Sand

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

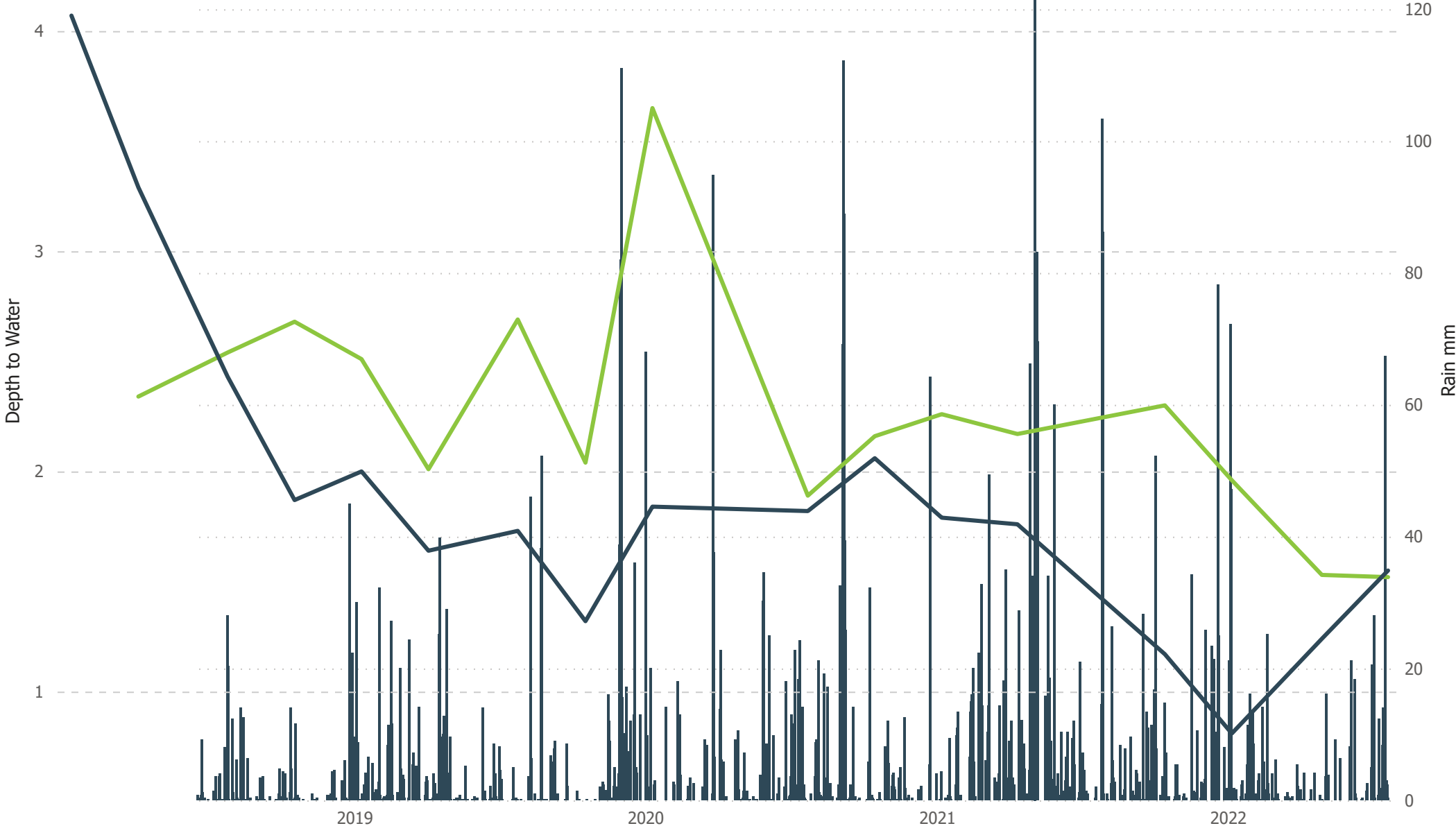


Graph 4: All Groundwater Depths with Rainfall in Hawkesbury Sandstone



Graph 5: Surface Water Depths with Rainfall

Sample
— Dam 1 - Process
— Dam 2 - Tailings



Weather Station Monitoring

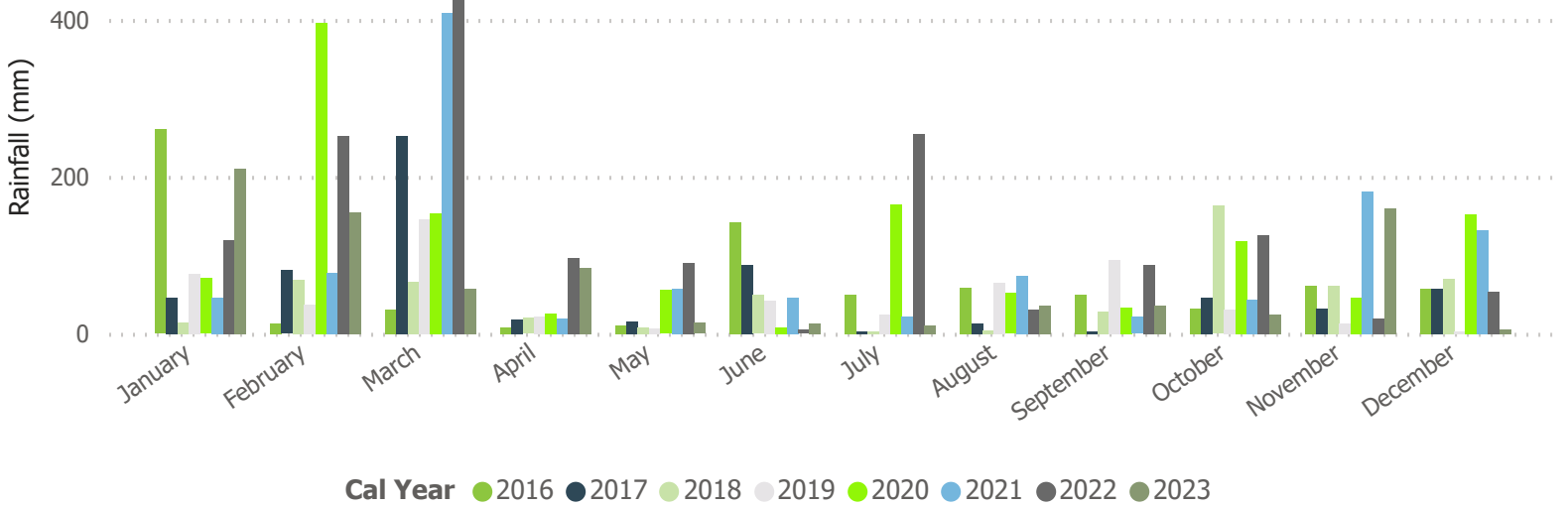
Due to gauge malfunctions, rainfall was not recorded in 2020 until a new weather station was installed onsite 29th May 2020. Where available, daily rainfall received in the interim was been sourced from the Bureau of Meteorology. Temperature monitoring during that period also shows gaps in the data.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

Weather Trends

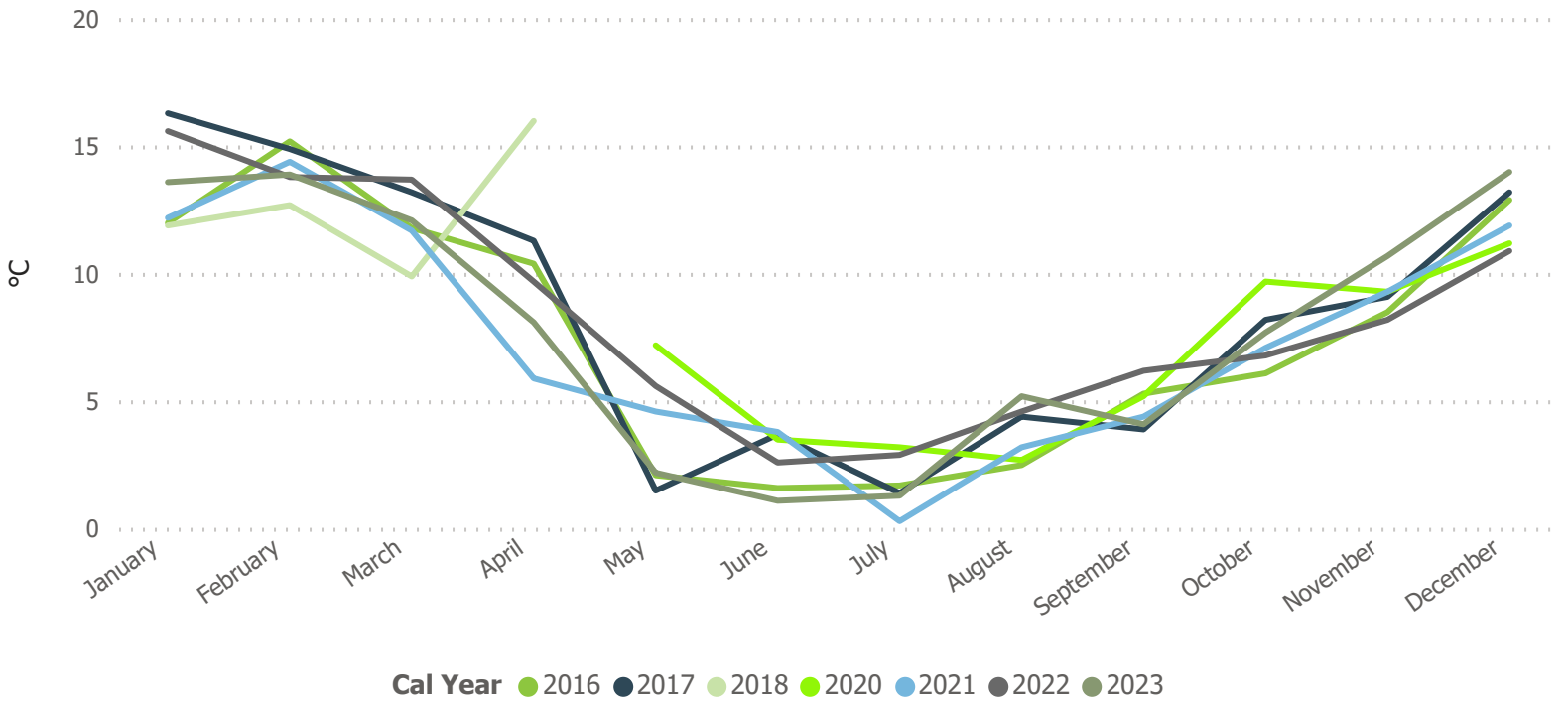
1/01/2016

31/01/2024

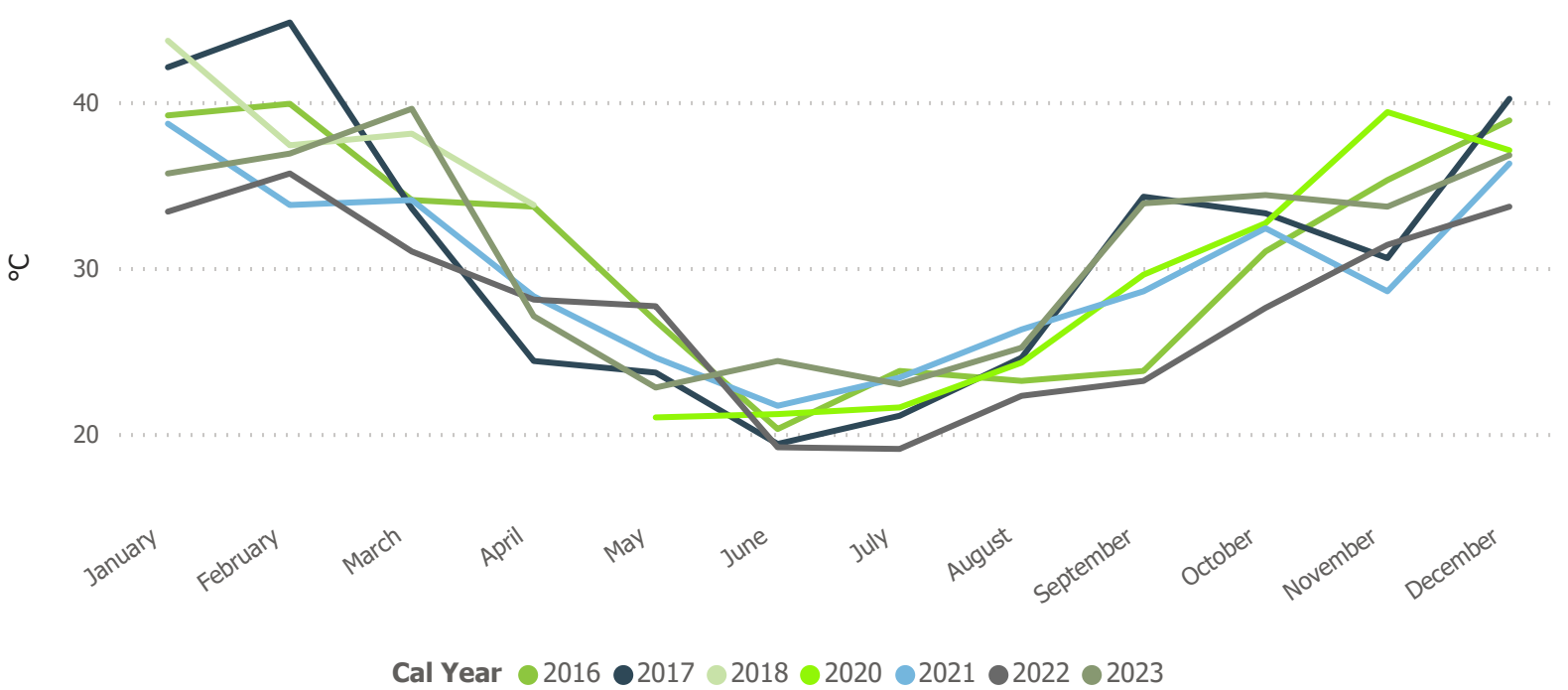
Precipitation



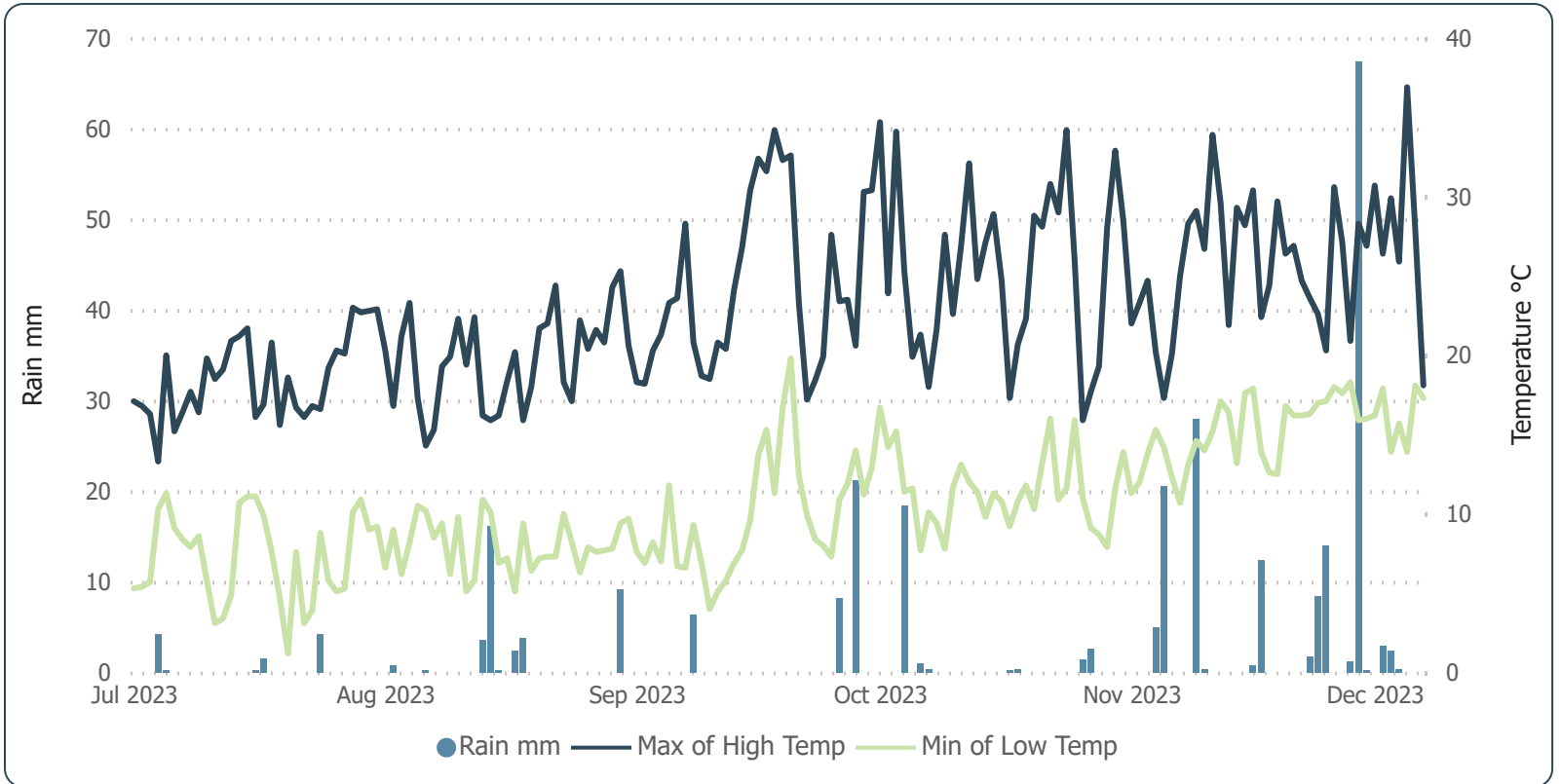
Minimum Temperature



Maximum Temperature



Weather Detail for last 6



Precipitation mm

Cal Year	July	August	September	October	November	December	Total
2023	10.4	36.4	35.8	24.4	160.2	5.8	273.0
Total	10.4	36.4	35.8	24.4	160.2	5.8	273.0

Minimum Temperature °C

Cal Year	July	August	September	October	November	December	Total
2023	1.3	5.2	4.1	7.7	10.7	14.0	1.3
Total	1.3	5.2	4.1	7.7	10.7	14.0	1.3

Average Temperature °C

Cal Year	July	August	September	October	November	December	Total
2023	12.4	13.1	16.6	18.1	19.4	21.8	16.1
Total	12.4	13.1	16.6	18.1	19.4	21.8	16.1

Maximum Temperature °C

Cal Year	July	August	September	October	November	December	Total
2023	23.0	25.2	33.9	34.4	33.7	36.8	36.8
Total	23.0	25.2	33.9	34.4	33.7	36.8	36.8

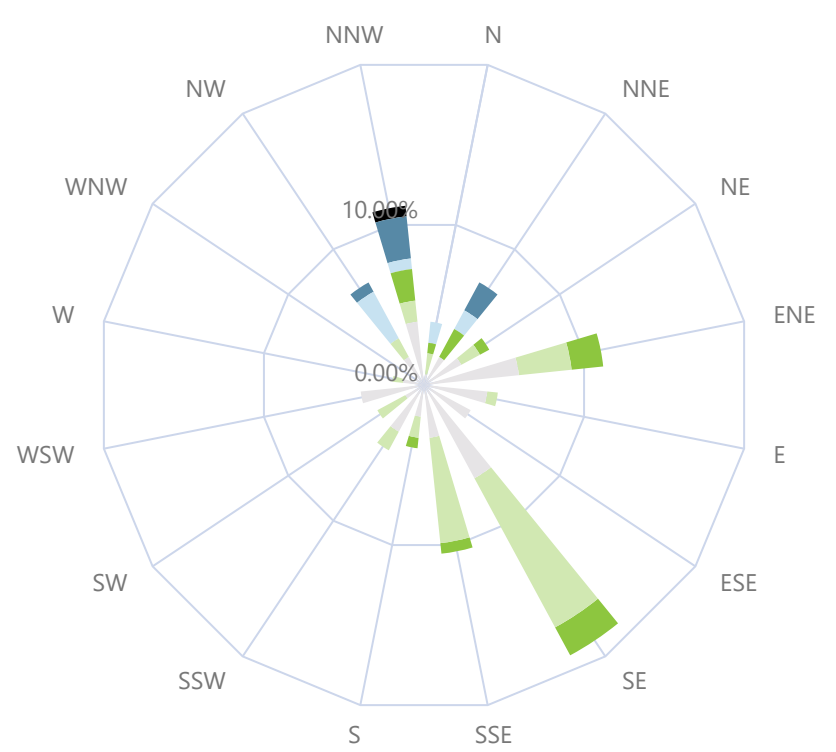
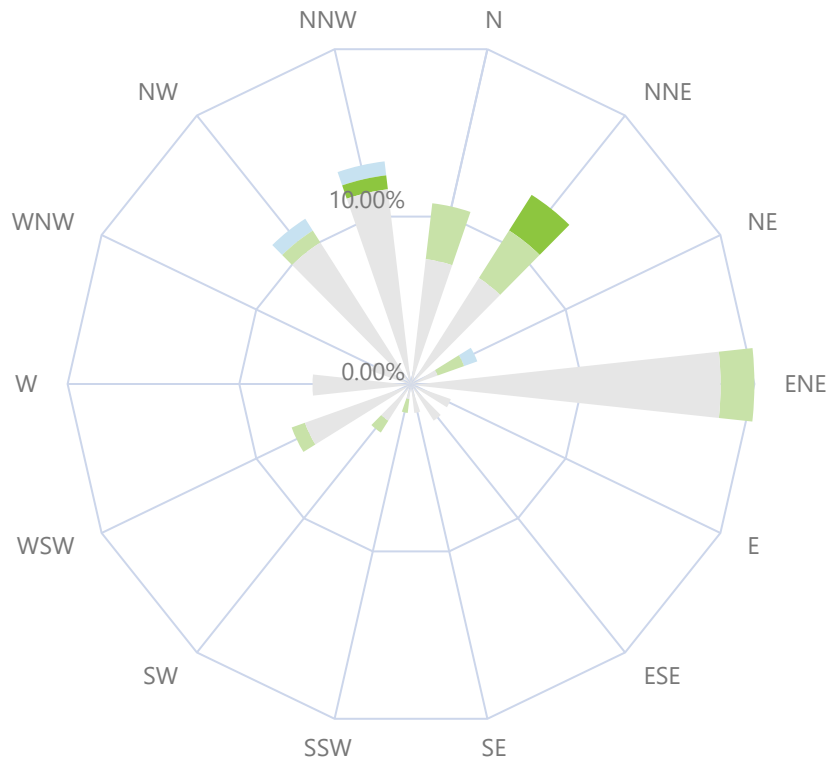
Wind Rose for Last 6 Months

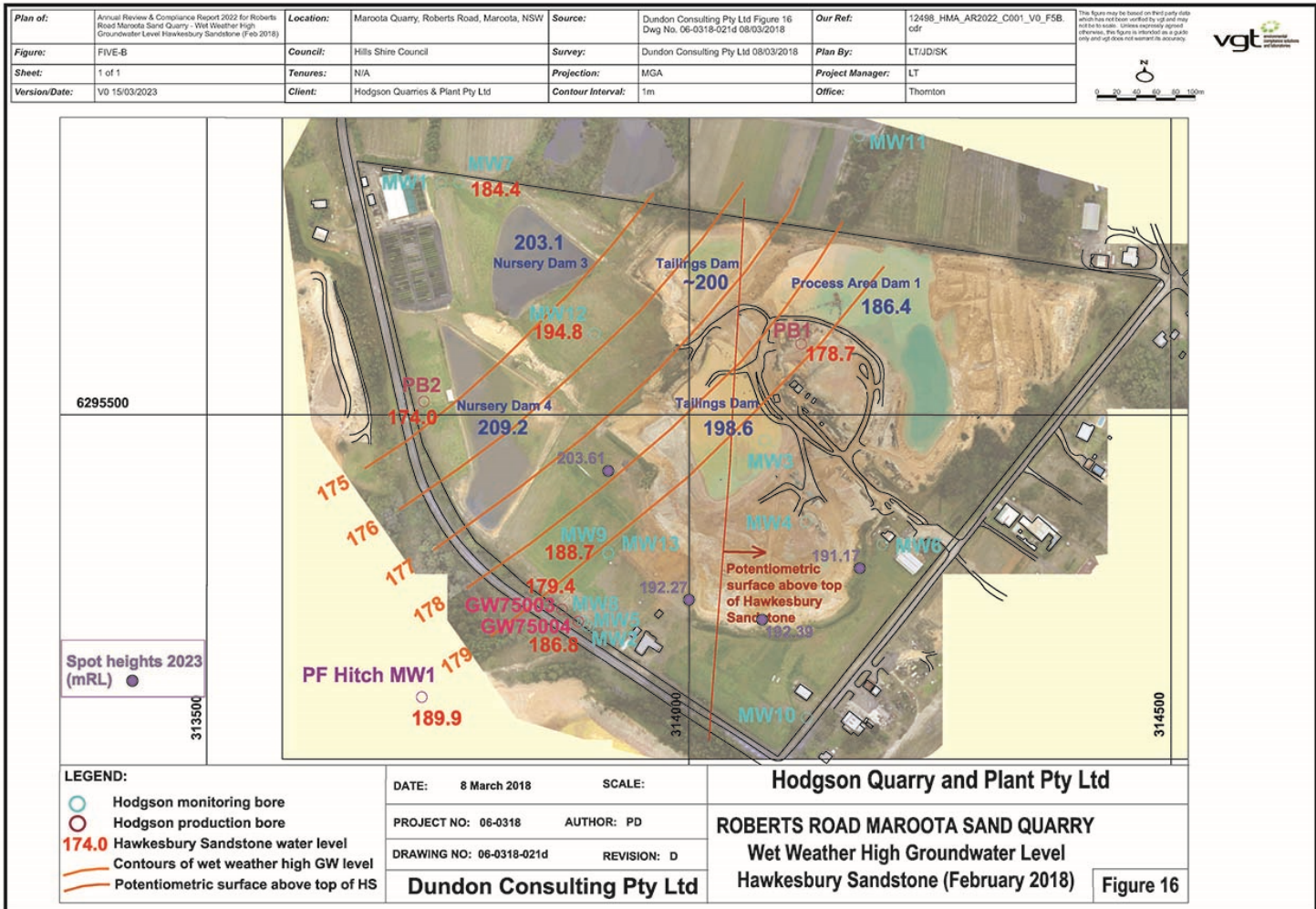
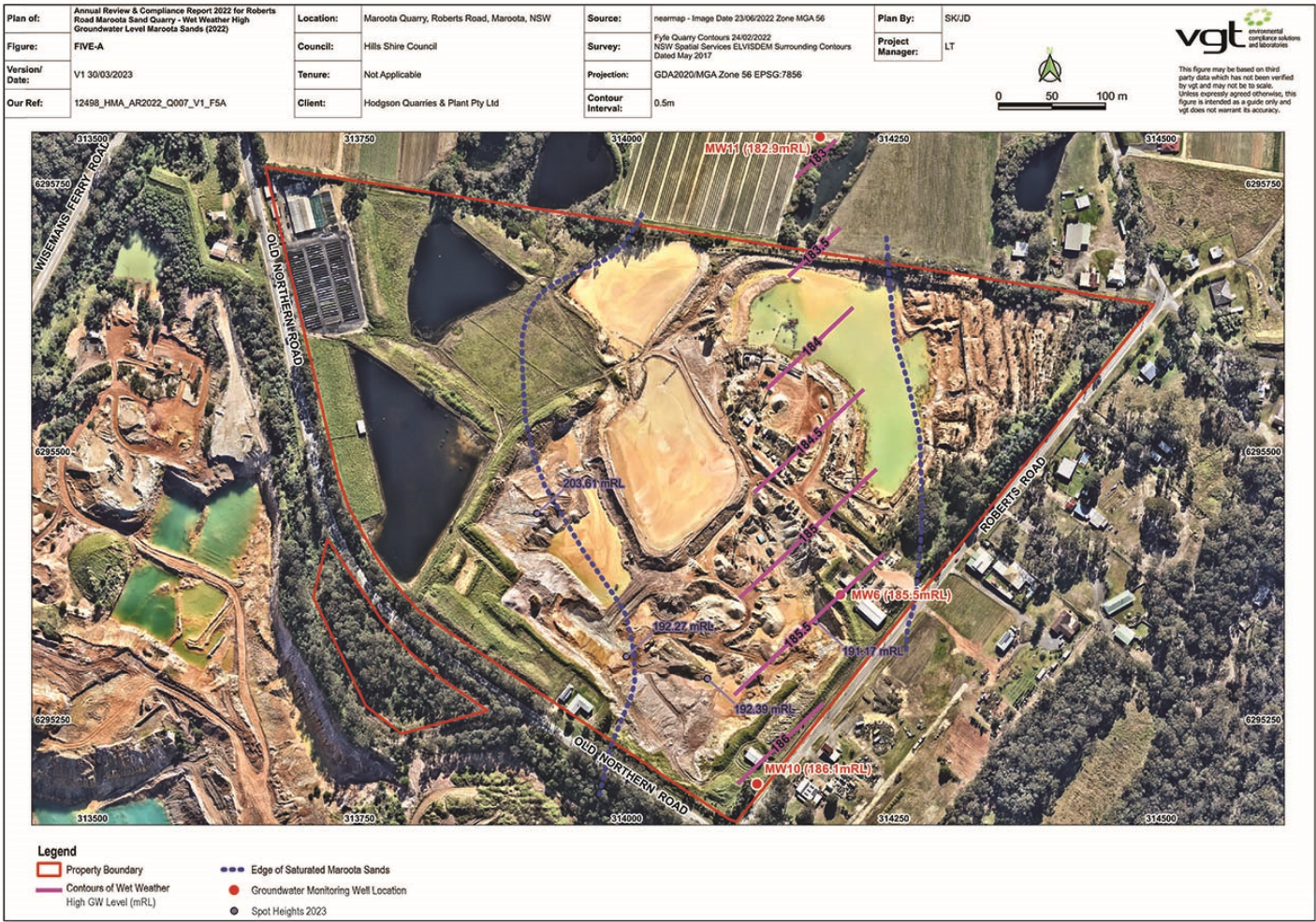
9 am

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

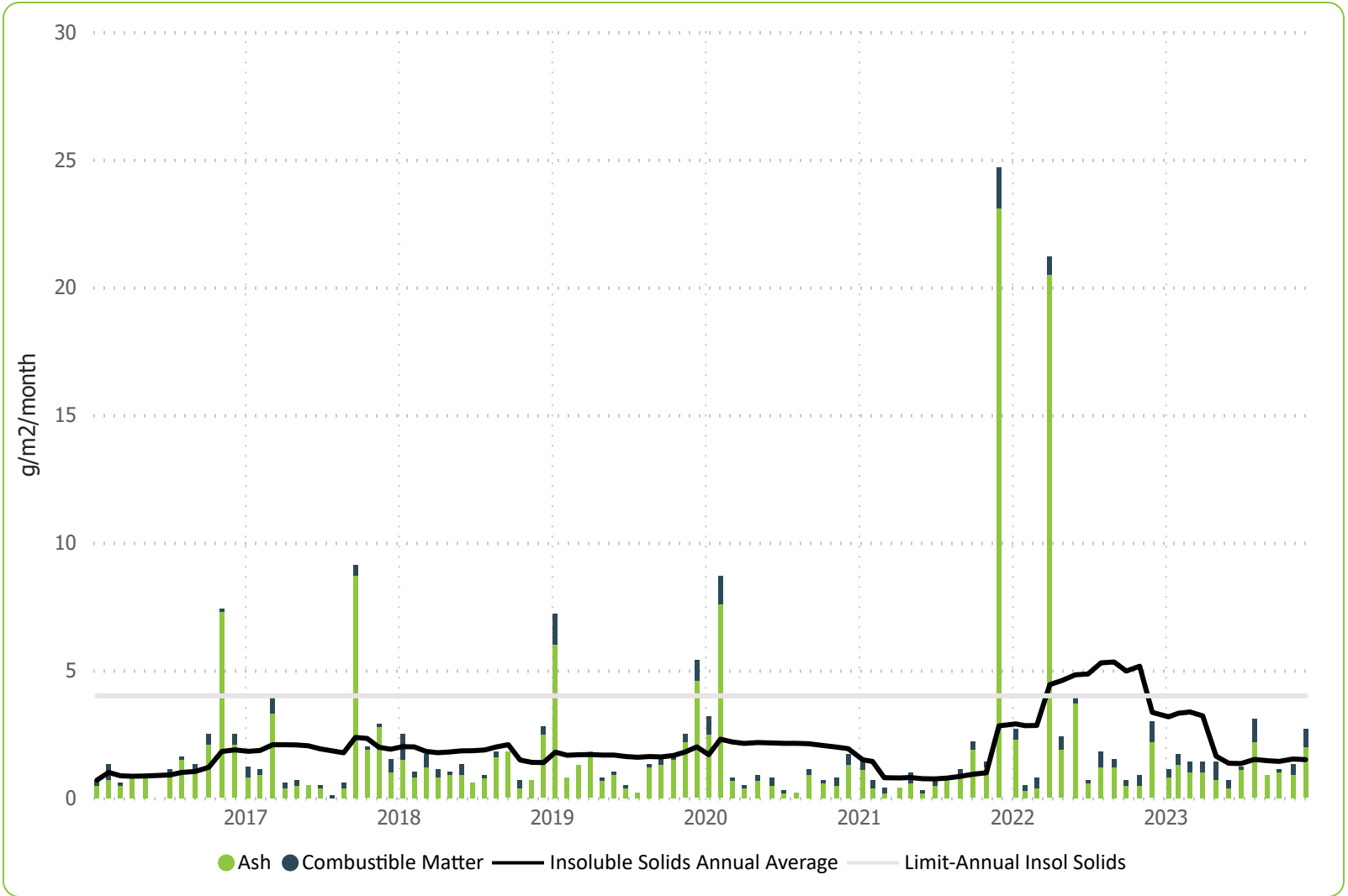




Depositional Dust and Particulate Matter Monitoring

Depositional Dusts last 12 months

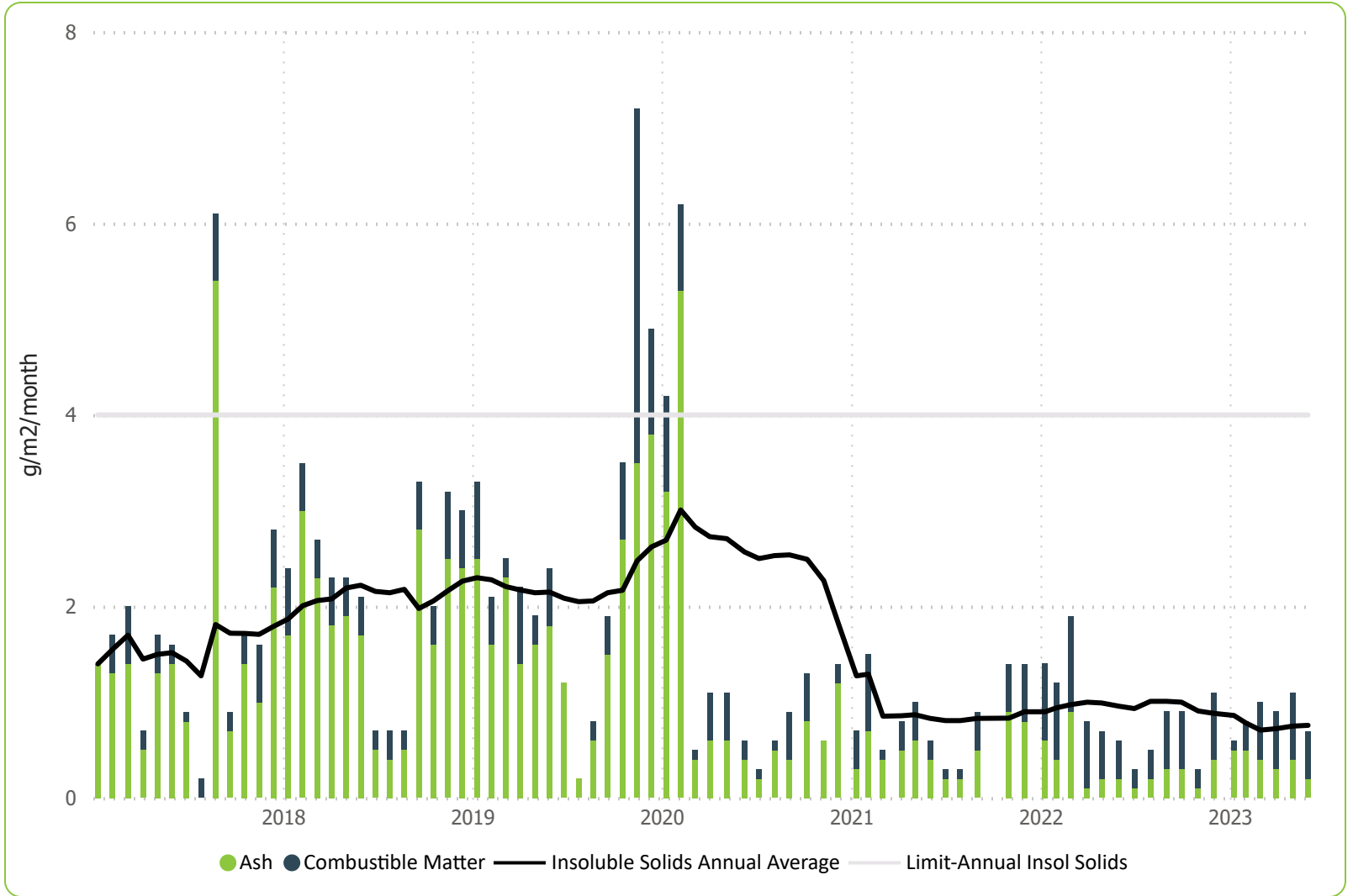
**Insoluble Solids
Annual Average
g/m²/month**



Date On	Comments	Date Sampled	Days On	Insoluble Solids	Ash	Combustible Matter	Calculated Rain
1/12/22	Sampled by Melissa Mass.	9/1/23	39	1.1	0.8	0.3	91
9/01/23		1/2/23	23	1.7	1.3	0.4	114
1/02/23	Sampled by M.Mass	1/3/23	28	1.4	1.0	0.4	115
1/03/23	Sampled by M.Mass	31/3/23	30	1.4	1.0	0.4	59
31/03/23	Sampled by M.Mass	2/5/23	32	1.4	0.7	0.7	86
2/05/23	Sampled by M.Mass.	1/6/23	30	0.7	0.4	0.3	18
1/06/23	Sampled by M.Mass.	30/6/23	29	1.2	1.1	0.1	16
30/06/23		1/8/23	32	3.1	2.2	0.9	14
1/08/23		1/9/23	31	0.9	0.9	0.0	41
1/09/23		29/9/23	28	1.1	1.0	0.1	31
29/09/23		1/11/23	33	1.3	0.9	0.4	28
1/11/23		1/12/23	30	2.7	2.0	0.7	114



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

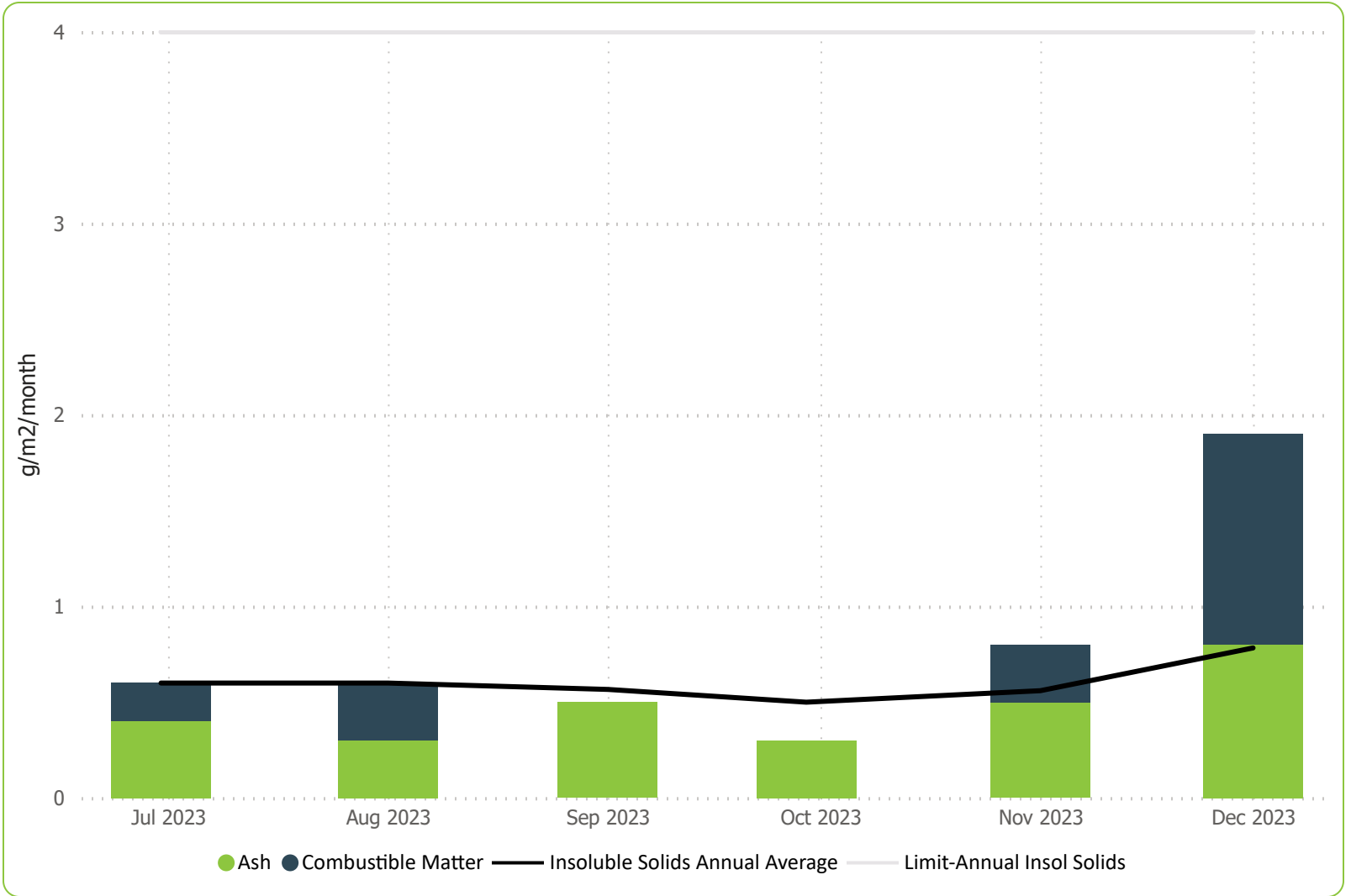


Date On	Comments
1/06/22	Sampled by Melissa Mass
1/07/22	Sampled by Melissa Mass. Flooding rainfall event during July.
1/08/22	Sampled by Melissa Mass.
1/09/22	Sampled by Melissa Mass.
30/09/22	Sampled by Melissa Mass.
1/11/22	Sampled by Melissa Mass.
1/12/22	Sampled by Melissa Mass.
9/01/23	
1/02/23	Sampled by M.Mass
1/03/23	Sampled by M.Mass. Not compliant - Clear sky/ 10m from obstacle
31/03/23	Sampled by M.Mass.

Date Sampled	Days On	Insoluble Solids	Ash	Combustible Matter	Calculated Rain
1/7/22	30	0.3	0.1	0.2	4
1/8/22	31	0.5	0.2	0.3	115
1/9/22	31	0.9	0.3	0.6	26
30/9/22	29	0.9	0.3	0.6	72
1/11/22	32	0.3	0.1	0.2	114
1/12/22	30	1.1	0.4	0.7	20
9/1/23	39	0.6	0.5	0.1	68
1/2/23	23	0.8	0.5	0.3	114
1/3/23	28	1.0	0.4	0.6	114
31/3/23	30	0.9	0.3	0.6	47
2/5/23	32	1.1	0.4	0.7	67
1/6/23	30	0.7	0.2	0.5	12



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



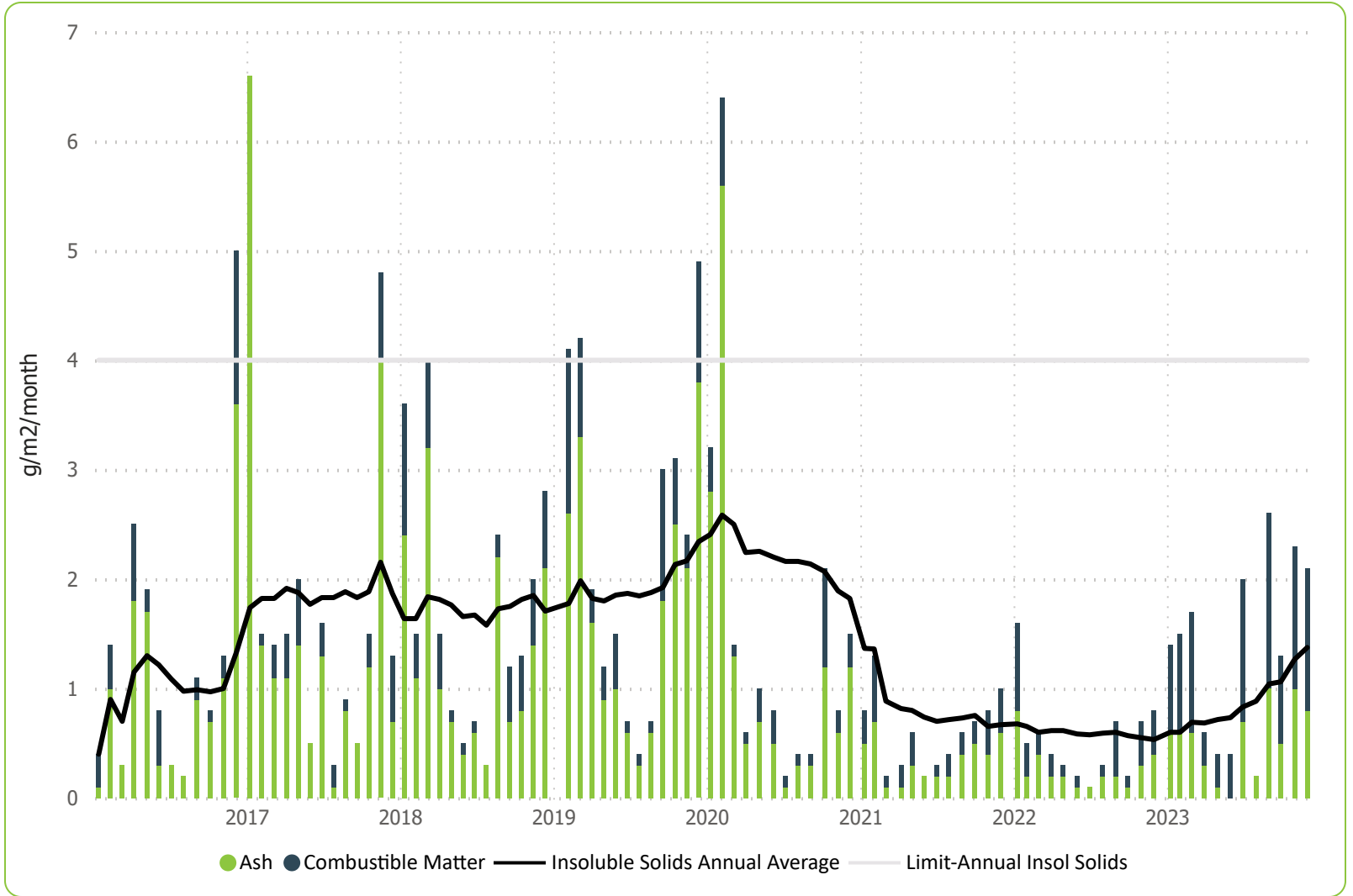
Date On	Comments	Date Sampled	Days On	Insoluble Solids	Ash	Combustible Matter	Calculated Rain
1/06/23	Sampled by M.Mass.	30/6/23	29	0.6	0.4	0.2	9
30/06/23		1/8/23	32	0.6	0.3	0.3	3
1/08/23		1/9/23	31	0.5	0.5	0.0	32
1/09/23		29/9/23	28	0.3	0.3	0.0	28
29/09/23		1/11/23	33	0.8	0.5	0.3	8
1/11/23		1/12/23	30	1.9	0.8	1.1	115

Depositional Dusts last 12 months

D3A Bundwall

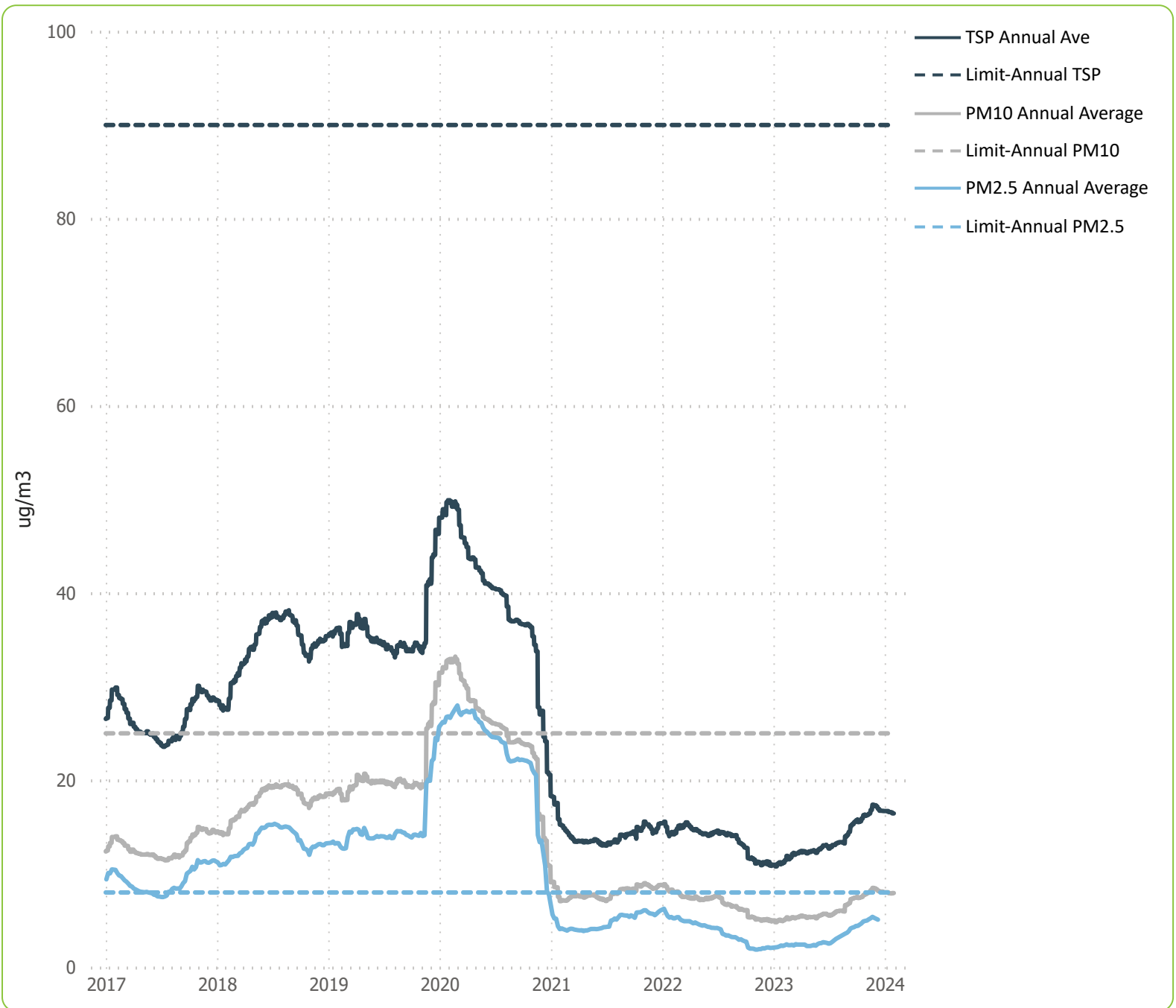
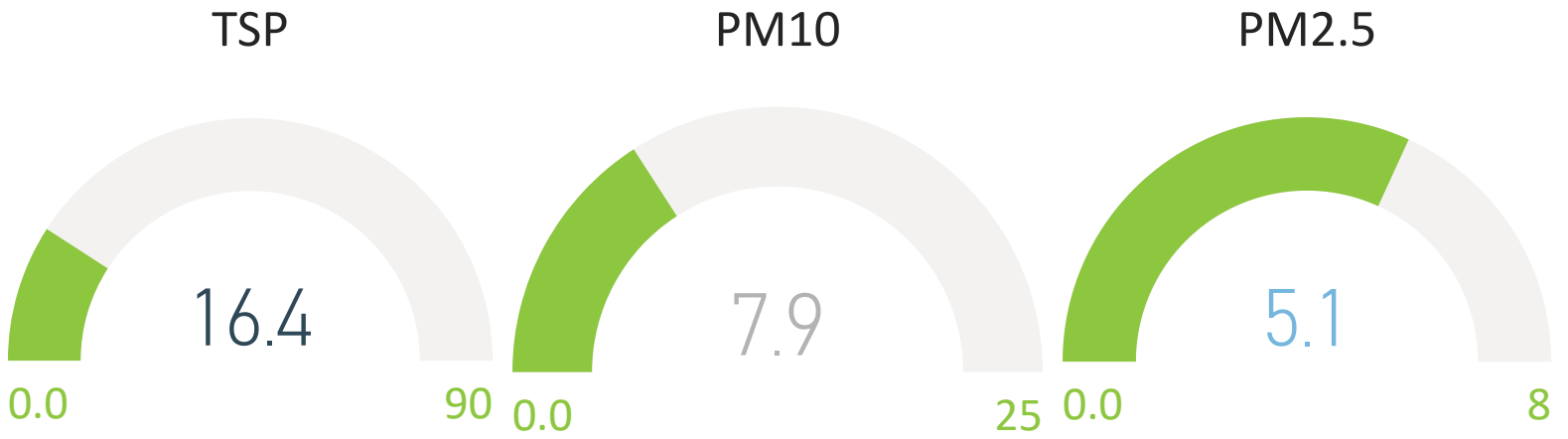


**Insoluble Solids
Annual Average
g/m2/month**

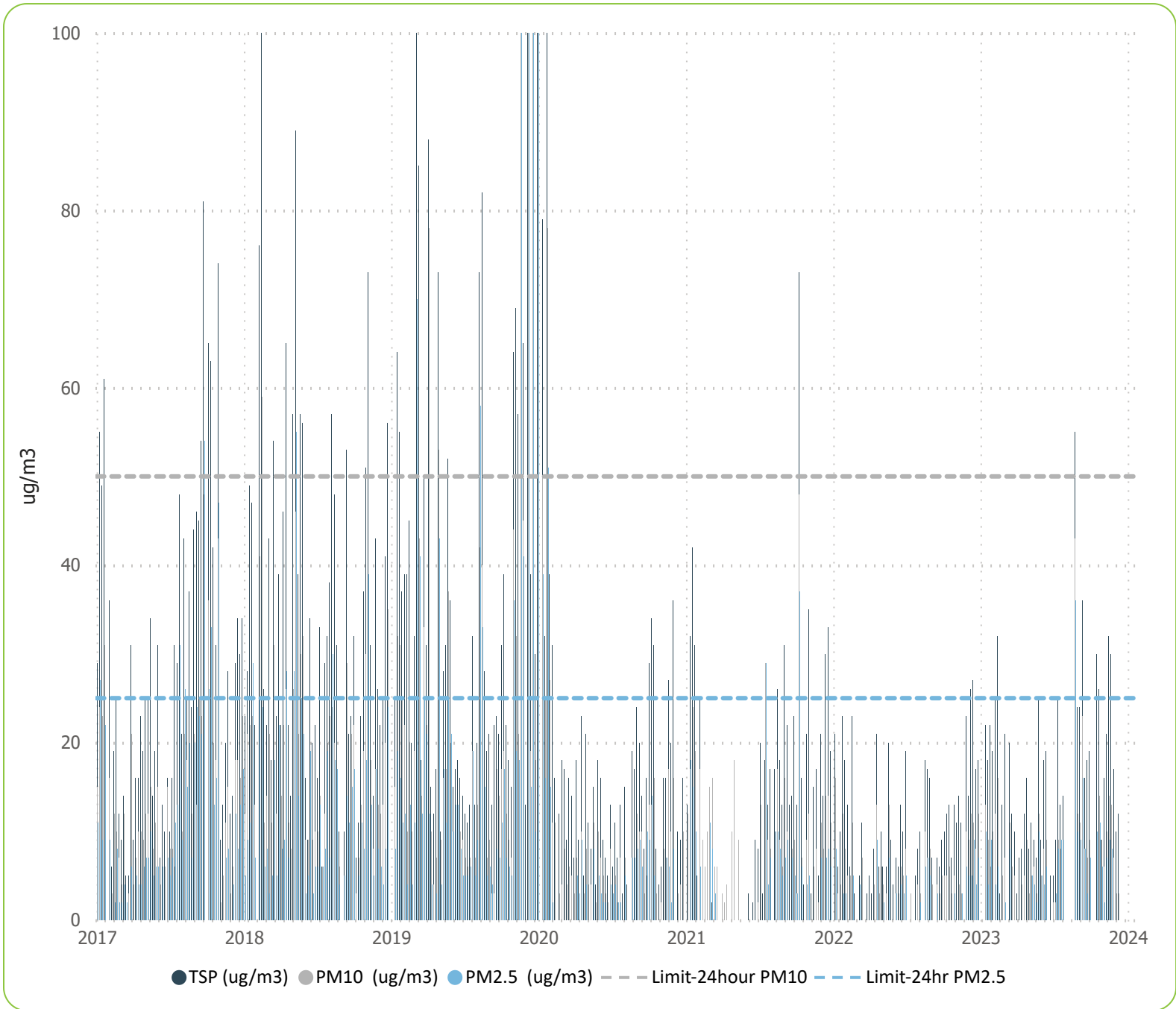


Date On	Comments	Date Sampled	Days On	Insoluble Solids	Ash	Combustible Matter	Calculated Rain
1/12/22	Sampled by Melissa Mass.	9/1/23	39	1.4	0.6	0.8	83
9/01/23		1/2/23	23	1.5	0.6	0.9	115
1/02/23	Sampled by M.Mass	1/3/23	28	1.7	0.6	1.1	115
1/03/23	Sampled by M.Mass	31/3/23	30	0.6	0.3	0.3	55
31/03/23	Sampled by M.Mass	2/5/23	32	0.4	0.1	0.3	82
2/05/23	Sampled by M.Mass.	1/6/23	30	0.4	0.0	0.4	19
1/06/23	Sampled by M.Mass.	30/6/23	29	2.0	0.7	1.3	16
30/06/23		1/8/23	32	0.2	0.2	0.0	13
1/08/23		1/9/23	31	2.6	1.0	1.6	40
1/09/23		29/9/23	28	1.3	0.5	0.8	35
29/09/23		1/11/23	33	2.3	1.0	1.3	26
1/11/23		1/12/23	30	2.1	0.8	1.3	115

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

24/8/23 36.00 RFS Back burning

Sample

Dam 1 - Process

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
Dam 1 - Process	23/1/23	4.2	228	140	54	5	2.0	3.0	20	4.0
Dam 1 - Process	21/4/23	4.4	174	110	45	4	0.5	2.0	19	3.0
Dam 1 - Process	14/7/23	4.3	213	130	54	2	0.6	3.0	28	4.0
Dam 1 - Process	5/10/23	4.3	229	140	55	3	1.0	3.0	26	5.0

Sample	Date	Average of pH	Average of Electrical Conductivity	Average of Total Dissolved Solids	Average of Chloride	Average of Sulphate	Average of Calcium	Average of Magnesium	Average of Sodium	Average of Potassium
Dam 1 - Process	23/1/23	4.2	228	140	54	5	2.0	3.0	20	4.0
Dam 1 - Process	21/4/23	4.4	174	110	45	4	0.5	2.0	19	3.0
Dam 1 - Process	14/7/23	4.3	213	130	54	2	0.6	3.0	28	4.0
Dam 1 - Process	5/10/23	4.3	229	140	55	3	1.0	3.0	26	5.0

Sample	Date	Min of pH	Min of Electrical Conductivity	Min of Total Dissolved Solids	Min of Chloride	Min of Sulphate	Min of Calcium	Min of Magnesium	Min of Sodium	Min of Potassium
Dam 1 - Process	23/1/23	4.2	228	140	54	5	2.0	3.0	20	4.0
Dam 1 - Process	21/4/23	4.4	174	110	45	4	0.5	2.0	19	3.0
Dam 1 - Process	14/7/23	4.3	213	130	54	2	0.6	3.0	28	4.0
Dam 1 - Process	5/10/23	4.3	229	140	55	3	1.0	3.0	26	5.0

Sample	Date	Max of pH	Max of Electrical Conductivity	Max of Total Dissolved Solids	Max of Chloride	Max of Sulphate	Max of Calcium	Max of Magnesium	Max of Sodium	Max of Potassium
Dam 1 - Process	23/1/23	4.2	228	140	54	5	2.0	3.0	20	4.0
Dam 1 - Process	21/4/23	4.4	174	110	45	4	0.5	2.0	19	3.0
Dam 1 - Process	14/7/23	4.3	213	130	54	2	0.6	3.0	28	4.0
Dam 1 - Process	5/10/23	4.3	229	140	55	3	1.0	3.0	26	5.0

Sample



Dam 2 - Tailings



Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
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Sample	Date	Average of pH	Average of Electrical Conductivity	Average of Total Dissolved Solids	Average of Chloride	Average of Sulphate	Average of Calcium	Average of Magnesium	Average of Sodium	Average of Potassium
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Sample	Date	Min of pH	Min of Electrical Conductivity	Min of Total Dissolved Solids	Min of Chloride	Min of Sulphate	Min of Calcium	Min of Magnesium	Min of Sodium	Min of Potassium
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Sample	Date	Max of pH	Max of Electrical Conductivity	Max of Total Dissolved Solids	Max of Chloride	Max of Sulphate	Max of Calcium	Max of Magnesium	Max of Sodium	Max of Potassium
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Sample

Dam 3 - Nursery

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
Dam 3 - Nursery	23/1/23	7.5	136	85	13	8	7.2	4.0	8	4.0
Dam 3 - Nursery	21/4/23	7.1	143	89	20	6	3.0	2.0	11	4.0
Dam 3 - Nursery	14/7/23	6.8	149	93	26	11	5.6	4.0	14	4.0
Dam 3 - Nursery	5/10/23	9.3	183	110	26	9	5.0	3.0	14	4.0

Sample	Date	Average of pH	Average of Electrical Conductivity	Average of Total Dissolved Solids	Average of Chloride	Average of Sulphate	Average of Calcium	Average of Magnesium	Average of Sodium	Average of Potassium
Dam 3 - Nursery	23/1/23	7.5	136	85	13	8	7.2	4.0	8	4.0
Dam 3 - Nursery	21/4/23	7.1	143	89	20	6	3.0	2.0	11	4.0
Dam 3 - Nursery	14/7/23	6.8	149	93	26	11	5.6	4.0	14	4.0
Dam 3 - Nursery	5/10/23	9.3	183	110	26	9	5.0	3.0	14	4.0

Sample	Date	Min of pH	Min of Electrical Conductivity	Min of Total Dissolved Solids	Min of Chloride	Min of Sulphate	Min of Calcium	Min of Magnesium	Min of Sodium	Min of Potassium
Dam 3 - Nursery	23/1/23	7.5	136	85	13	8	7.2	4.0	8	4.0
Dam 3 - Nursery	21/4/23	7.1	143	89	20	6	3.0	2.0	11	4.0
Dam 3 - Nursery	14/7/23	6.8	149	93	26	11	5.6	4.0	14	4.0
Dam 3 - Nursery	5/10/23	9.3	183	110	26	9	5.0	3.0	14	4.0

Sample	Date	Max of pH	Max of Electrical Conductivity	Max of Total Dissolved Solids	Max of Chloride	Max of Sulphate	Max of Calcium	Max of Magnesium	Max of Sodium	Max of Potassium
Dam 3 - Nursery	23/1/23	7.5	136	85	13	8	7.2	4.0	8	4.0
Dam 3 - Nursery	21/4/23	7.1	143	89	20	6	3.0	2.0	11	4.0
Dam 3 - Nursery	14/7/23	6.8	149	93	26	11	5.6	4.0	14	4.0
Dam 3 - Nursery	5/10/23	9.3	183	110	26	9	5.0	3.0	14	4.0

Sample

Dam 4 - Farm

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
Dam 4 - Farm	23/1/23	9.1	85	53	12	5	2.0	2.0	7	3.0
Dam 4 - Farm	21/4/23	7.2	68	0	37	7	0.0	0.6	6	2.0
Dam 4 - Farm	14/7/23	6.6	66	0	13	5	2.0	2.0	7	3.0
Dam 4 - Farm	5/10/23	8.8	89	56	12	4	2.0	2.0	8	3.0

Sample	Date	Average of pH	Average of Electrical Conductivity	Average of Total Dissolved Solids	Average of Chloride	Average of Sulphate	Average of Calcium	Average of Magnesium	Average of Sodium	Average of Potassium
Dam 4 - Farm	23/1/23	9.1	85	53	12	5	2.0	2.0	7	3.0
Dam 4 - Farm	21/4/23	7.2	68	0	37	7	0.0	0.6	6	2.0
Dam 4 - Farm	14/7/23	6.6	66	0	13	5	2.0	2.0	7	3.0
Dam 4 - Farm	5/10/23	8.8	89	56	12	4	2.0	2.0	8	3.0

Sample	Date	Min of pH	Min of Electrical Conductivity	Min of Total Dissolved Solids	Min of Chloride	Min of Sulphate	Min of Calcium	Min of Magnesium	Min of Sodium	Min of Potassium
Dam 4 - Farm	23/1/23	9.1	85	53	12	5	2.0	2.0	7	3.0
Dam 4 - Farm	21/4/23	7.2	68	0	37	7	0.0	0.6	6	2.0
Dam 4 - Farm	14/7/23	6.6	66	0	13	5	2.0	2.0	7	3.0
Dam 4 - Farm	5/10/23	8.8	89	56	12	4	2.0	2.0	8	3.0

Sample	Date	Max of pH	Max of Electrical Conductivity	Max of Total Dissolved Solids	Max of Chloride	Max of Sulphate	Max of Calcium	Max of Magnesium	Max of Sodium	Max of Potassium
Dam 4 - Farm	23/1/23	9.1	85	53	12	5	2.0	2.0	7	3.0
Dam 4 - Farm	21/4/23	7.2	68	0	37	7	0.0	0.6	6	2.0
Dam 4 - Farm	14/7/23	6.6	66	0	13	5	2.0	2.0	7	3.0
Dam 4 - Farm	5/10/23	8.8	89	56	12	4	2.0	2.0	8	3.0

Sample

MW1

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
MW1	23/1/23	4.9	294	180	62	18	4.0	7.7	26	3.0
MW1	21/4/23	4.9	289	180	66	19	3.0	6.6	27	2.0
MW1	14/7/23	4.5	288	180	45	28	5.2	11.0	20	4.0
MW1	5/10/23	4.0	332	210	42	22	5.1	14.0	17	4.0

Sample	Date	Average of pH	Average of Electrical Conductivity	Average of Total Dissolved Solids	Average of Chloride	Average of Sulphate	Average of Calcium	Average of Magnesium	Average of Sodium	Average of Potassium
MW1	23/1/23	4.9	294	180	62	18	4.0	7.7	26	3.0
MW1	21/4/23	4.9	289	180	66	19	3.0	6.6	27	2.0
MW1	14/7/23	4.5	288	180	45	28	5.2	11.0	20	4.0
MW1	5/10/23	4.0	332	210	42	22	5.1	14.0	17	4.0

Sample	Date	Min of pH	Min of Electrical Conductivity	Min of Total Dissolved Solids	Min of Chloride	Min of Sulphate	Min of Calcium	Min of Magnesium	Min of Sodium	Min of Potassium
MW1	23/1/23	4.9	294	180	62	18	4.0	7.7	26	3.0
MW1	21/4/23	4.9	289	180	66	19	3.0	6.6	27	2.0
MW1	14/7/23	4.5	288	180	45	28	5.2	11.0	20	4.0
MW1	5/10/23	4.0	332	210	42	22	5.1	14.0	17	4.0

Sample	Date	Max of pH	Max of Electrical Conductivity	Max of Total Dissolved Solids	Max of Chloride	Max of Sulphate	Max of Calcium	Max of Magnesium	Max of Sodium	Max of Potassium
MW1	23/1/23	4.9	294	180	62	18	4.0	7.7	26	3.0
MW1	21/4/23	4.9	289	180	66	19	3.0	6.6	27	2.0
MW1	14/7/23	4.5	288	180	45	28	5.2	11.0	20	4.0
MW1	5/10/23	4.0	332	210	42	22	5.1	14.0	17	4.0

Sample

MW10

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
MW10	23/1/23	3.9	598	370	160	26	0.8	9.8	56	0.8
MW10	21/4/23	4.1	552	340	160	5	1.0	9.3	67	0.7
MW10	14/7/23	4.0	507	320	140	42	1.0	9.7	72	1.0
MW10	5/10/23	4.5	262	160	63	3	2.0	5.0	29	1.0

Sample	Date	Average of pH	Average of Electrical Conductivity	Average of Total Dissolved Solids	Average of Chloride	Average of Sulphate	Average of Calcium	Average of Magnesium	Average of Sodium	Average of Potassium
MW10	23/1/23	3.9	598	370	160	26	0.8	9.8	56	0.8
MW10	21/4/23	4.1	552	340	160	5	1.0	9.3	67	0.7
MW10	14/7/23	4.0	507	320	140	42	1.0	9.7	72	1.0
MW10	5/10/23	4.5	262	160	63	3	2.0	5.0	29	1.0

Sample	Date	Min of pH	Min of Electrical Conductivity	Min of Total Dissolved Solids	Min of Chloride	Min of Sulphate	Min of Calcium	Min of Magnesium	Min of Sodium	Min of Potassium
MW10	23/1/23	3.9	598	370	160	26	0.8	9.8	56	0.8
MW10	21/4/23	4.1	552	340	160	5	1.0	9.3	67	0.7
MW10	14/7/23	4.0	507	320	140	42	1.0	9.7	72	1.0
MW10	5/10/23	4.5	262	160	63	3	2.0	5.0	29	1.0

Sample	Date	Max of pH	Max of Electrical Conductivity	Max of Total Dissolved Solids	Max of Chloride	Max of Sulphate	Max of Calcium	Max of Magnesium	Max of Sodium	Max of Potassium
MW10	23/1/23	3.9	598	370	160	26	0.8	9.8	56	0.8
MW10	21/4/23	4.1	552	340	160	5	1.0	9.3	67	0.7
MW10	14/7/23	4.0	507	320	140	42	1.0	9.7	72	1.0
MW10	5/10/23	4.5	262	160	63	3	2.0	5.0	29	1.0

Sample

MW11 (Off Old Telegraph Rd)

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
MW11 (Off Old Telegraph Rd)	23/1/23	6.5	435	270	46	20	36.0	8.3	19	7.5
MW11 (Off Old Telegraph Rd)	21/4/23	6.5	269	170	30	9	12.0	3.0	15	5.6
MW11 (Off Old Telegraph Rd)	14/7/23	6.6	345	220	32	19	36.0	7.0	17	6.2
MW11 (Off Old Telegraph Rd)	5/10/23	6.0	202	130	31	11	11.0	3.0	13	8.2

Sample	Date	Average of pH	Average of Electrical Conductivity	Average of Total Dissolved Solids	Average of Chloride	Average of Sulphate	Average of Calcium	Average of Magnesium	Average of Sodium	Average of Potassium
MW11 (Off Old Telegraph Rd)	23/1/23	6.5	435	270	46	20	36.0	8.3	19	7.5
MW11 (Off Old Telegraph Rd)	21/4/23	6.5	269	170	30	9	12.0	3.0	15	5.6
MW11 (Off Old Telegraph Rd)	14/7/23	6.6	345	220	32	19	36.0	7.0	17	6.2
MW11 (Off Old Telegraph Rd)	5/10/23	6.0	202	130	31	11	11.0	3.0	13	8.2

Sample	Date	Min of pH	Min of Electrical Conductivity	Min of Total Dissolved Solids	Min of Chloride	Min of Sulphate	Min of Calcium	Min of Magnesium	Min of Sodium	Min of Potassium
MW11 (Off Old Telegraph Rd)	23/1/23	6.5	435	270	46	20	36.0	8.3	19	7.5
MW11 (Off Old Telegraph Rd)	21/4/23	6.5	269	170	30	9	12.0	3.0	15	5.6
MW11 (Off Old Telegraph Rd)	14/7/23	6.6	345	220	32	19	36.0	7.0	17	6.2
MW11 (Off Old Telegraph Rd)	5/10/23	6.0	202	130	31	11	11.0	3.0	13	8.2

Sample	Date	Max of pH	Max of Electrical Conductivity	Max of Total Dissolved Solids	Max of Chloride	Max of Sulphate	Max of Calcium	Max of Magnesium	Max of Sodium	Max of Potassium
MW11 (Off Old Telegraph Rd)	23/1/23	6.5	435	270	46	20	36.0	8.3	19	7.5
MW11 (Off Old Telegraph Rd)	21/4/23	6.5	269	170	30	9	12.0	3.0	15	5.6
MW11 (Off Old Telegraph Rd)	14/7/23	6.6	345	220	32	19	36.0	7.0	17	6.2
MW11 (Off Old Telegraph Rd)	5/10/23	6.0	202	130	31	11	11.0	3.0	13	8.2

Sample

MW12

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
MW12	23/1/23	4.6	114	71	21	8	1.0	1.0	13	0.6
MW12	21/4/23	4.8	109	68	21	9	0.7	0.6	13	0.0
MW12	14/7/23	4.9	117	73	19	10	2.0	1.0	14	0.5
MW12	5/10/23	4.9	107	67	17	7	2.0	0.9	14	0.0

Sample	Date	Average of pH	Average of Electrical Conductivity	Average of Total Dissolved Solids	Average of Chloride	Average of Sulphate	Average of Calcium	Average of Magnesium	Average of Sodium	Average of Potassium
MW12	23/1/23	4.6	114	71	21	8	1.0	1.0	13	0.6
MW12	21/4/23	4.8	109	68	21	9	0.7	0.6	13	0.0
MW12	14/7/23	4.9	117	73	19	10	2.0	1.0	14	0.5
MW12	5/10/23	4.9	107	67	17	7	2.0	0.9	14	0.0

Sample	Date	Min of pH	Min of Electrical Conductivity	Min of Total Dissolved Solids	Min of Chloride	Min of Sulphate	Min of Calcium	Min of Magnesium	Min of Sodium	Min of Potassium
MW12	23/1/23	4.6	114	71	21	8	1.0	1.0	13	0.6
MW12	21/4/23	4.8	109	68	21	9	0.7	0.6	13	0.0
MW12	14/7/23	4.9	117	73	19	10	2.0	1.0	14	0.5
MW12	5/10/23	4.9	107	67	17	7	2.0	0.9	14	0.0

Sample	Date	Max of pH	Max of Electrical Conductivity	Max of Total Dissolved Solids	Max of Chloride	Max of Sulphate	Max of Calcium	Max of Magnesium	Max of Sodium	Max of Potassium
MW12	23/1/23	4.6	114	71	21	8	1.0	1.0	13	0.6
MW12	21/4/23	4.8	109	68	21	9	0.7	0.6	13	0.0
MW12	14/7/23	4.9	117	73	19	10	2.0	1.0	14	0.5
MW12	5/10/23	4.9	107	67	17	7	2.0	0.9	14	0.0

Sample

MW6 (Office)

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
MW6 (Office)	23/1/23	7.6	383	240	86	1	6.3	5.0	57	2.0
MW6 (Office)	21/4/23	8.2	382	240	87	6	2.0	3.0	49	2.0
MW6 (Office)	14/7/23	7.0	368	230	86	2	6.3	5.0	61	3.0
MW6 (Office)	5/10/23	7.5	354	220	83	0	4.0	3.0	49	2.0

Sample	Date	Average of pH	Average of Electrical Conductivity	Average of Total Dissolved Solids	Average of Chloride	Average of Sulphate	Average of Calcium	Average of Magnesium	Average of Sodium	Average of Potassium
MW6 (Office)	23/1/23	7.6	383	240	86	1	6.3	5.0	57	2.0
MW6 (Office)	21/4/23	8.2	382	240	87	6	2.0	3.0	49	2.0
MW6 (Office)	14/7/23	7.0	368	230	86	2	6.3	5.0	61	3.0
MW6 (Office)	5/10/23	7.5	354	220	83	0	4.0	3.0	49	2.0

Sample	Date	Min of pH	Min of Electrical Conductivity	Min of Total Dissolved Solids	Min of Chloride	Min of Sulphate	Min of Calcium	Min of Magnesium	Min of Sodium	Min of Potassium
MW6 (Office)	23/1/23	7.6	383	240	86	1	6.3	5.0	57	2.0
MW6 (Office)	21/4/23	8.2	382	240	87	6	2.0	3.0	49	2.0
MW6 (Office)	14/7/23	7.0	368	230	86	2	6.3	5.0	61	3.0
MW6 (Office)	5/10/23	7.5	354	220	83	0	4.0	3.0	49	2.0

Sample	Date	Max of pH	Max of Electrical Conductivity	Max of Total Dissolved Solids	Max of Chloride	Max of Sulphate	Max of Calcium	Max of Magnesium	Max of Sodium	Max of Potassium
MW6 (Office)	23/1/23	7.6	383	240	86	1	6.3	5.0	57	2.0
MW6 (Office)	21/4/23	8.2	382	240	87	6	2.0	3.0	49	2.0
MW6 (Office)	14/7/23	7.0	368	230	86	2	6.3	5.0	61	3.0
MW6 (Office)	5/10/23	7.5	354	220	83	0	4.0	3.0	49	2.0

Sample

MW7

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
MW7	23/1/23	5.5	218	140	30	18	0.0	0.0	35	0.0
MW7	21/4/23	5.5	190	120	31	13	0.0	0.0	29	0.0
MW7	14/7/23	4.6	149	93	27	9	2.0	4.0	17	0.6
MW7	5/10/23	5.4	186	120	28	6	1.0	0.8	30	0.0

Sample	Date	Average of pH	Average of Electrical Conductivity	Average of Total Dissolved Solids	Average of Chloride	Average of Sulphate	Average of Calcium	Average of Magnesium	Average of Sodium	Average of Potassium
MW7	23/1/23	5.5	218	140	30	18	0.0	0.0	35	0.0
MW7	21/4/23	5.5	190	120	31	13	0.0	0.0	29	0.0
MW7	14/7/23	4.6	149	93	27	9	2.0	4.0	17	0.6
MW7	5/10/23	5.4	186	120	28	6	1.0	0.8	30	0.0

Sample	Date	Min of pH	Min of Electrical Conductivity	Min of Total Dissolved Solids	Min of Chloride	Min of Sulphate	Min of Calcium	Min of Magnesium	Min of Sodium	Min of Potassium
MW7	23/1/23	5.5	218	140	30	18	0.0	0.0	35	0.0
MW7	21/4/23	5.5	190	120	31	13	0.0	0.0	29	0.0
MW7	14/7/23	4.6	149	93	27	9	2.0	4.0	17	0.6
MW7	5/10/23	5.4	186	120	28	6	1.0	0.8	30	0.0

Sample	Date	Max of pH	Max of Electrical Conductivity	Max of Total Dissolved Solids	Max of Chloride	Max of Sulphate	Max of Calcium	Max of Magnesium	Max of Sodium	Max of Potassium
MW7	23/1/23	5.5	218	140	30	18	0.0	0.0	35	0.0
MW7	21/4/23	5.5	190	120	31	13	0.0	0.0	29	0.0
MW7	14/7/23	4.6	149	93	27	9	2.0	4.0	17	0.6
MW7	5/10/23	5.4	186	120	28	6	1.0	0.8	30	0.0

Sample

MW8

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
MW8	23/1/23	4.4	170	110	40	2	0.9	2.0	17	0.0
MW8	21/4/23	4.3	163	100	40	2	0.5	2.0	18	0.0
MW8	14/7/23	4.3	184	110	45	4	0.9	3.0	20	0.0
MW8	5/10/23	4.4	198	120	47	2	2.0	3.0	22	0.0

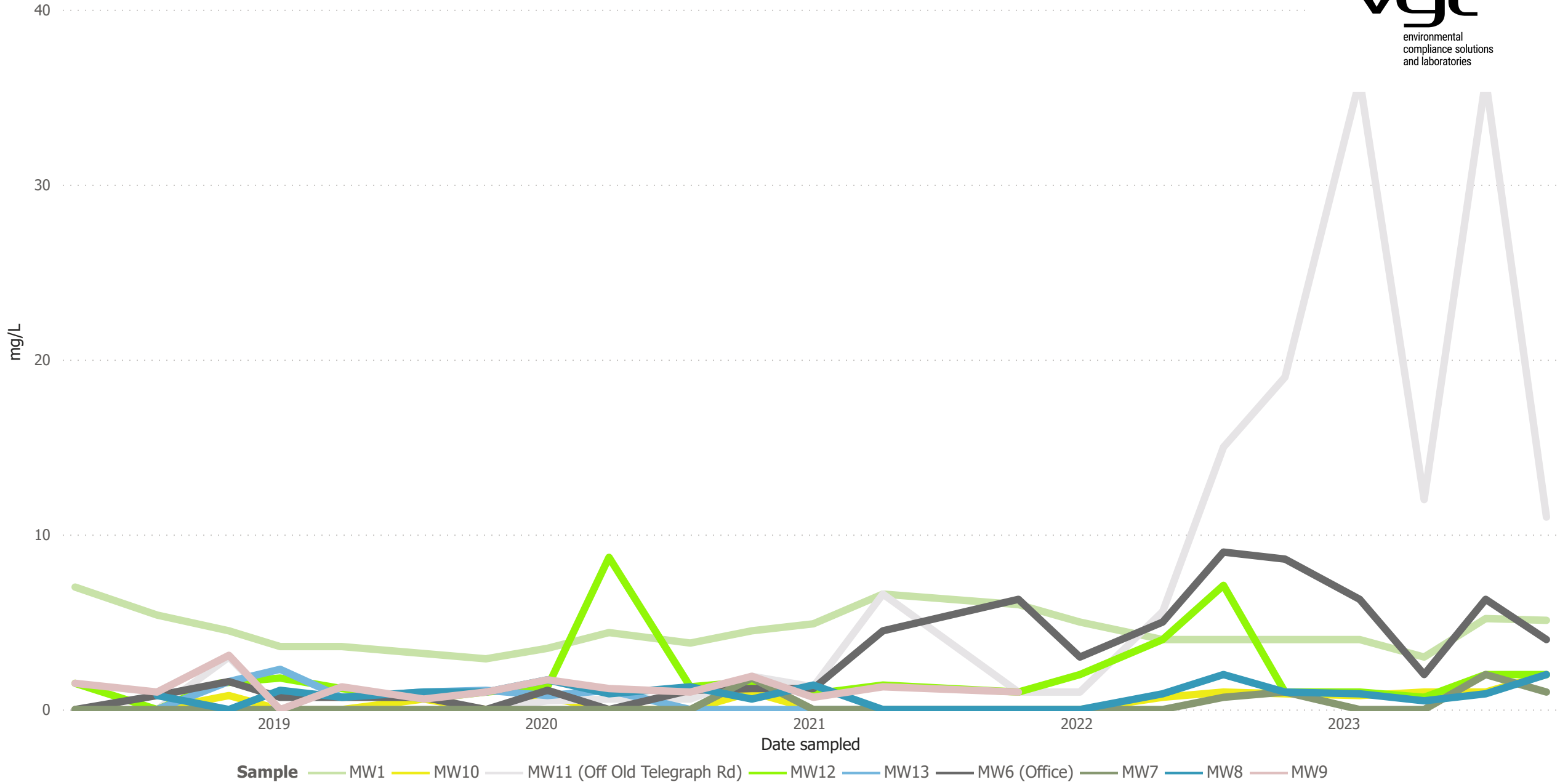
Sample	Date	Average of pH	Average of Electrical Conductivity	Average of Total Dissolved Solids	Average of Chloride	Average of Sulphate	Average of Calcium	Average of Magnesium	Average of Sodium	Average of Potassium
MW8	23/1/23	4.4	170	110	40	2	0.9	2.0	17	0.0
MW8	21/4/23	4.3	163	100	40	2	0.5	2.0	18	0.0
MW8	14/7/23	4.3	184	110	45	4	0.9	3.0	20	0.0
MW8	5/10/23	4.4	198	120	47	2	2.0	3.0	22	0.0

Sample	Date	Min of pH	Min of Electrical Conductivity	Min of Total Dissolved Solids	Min of Chloride	Min of Sulphate	Min of Calcium	Min of Magnesium	Min of Sodium	Min of Potassium
MW8	23/1/23	4.4	170	110	40	2	0.9	2.0	17	0.0
MW8	21/4/23	4.3	163	100	40	2	0.5	2.0	18	0.0
MW8	14/7/23	4.3	184	110	45	4	0.9	3.0	20	0.0
MW8	5/10/23	4.4	198	120	47	2	2.0	3.0	22	0.0

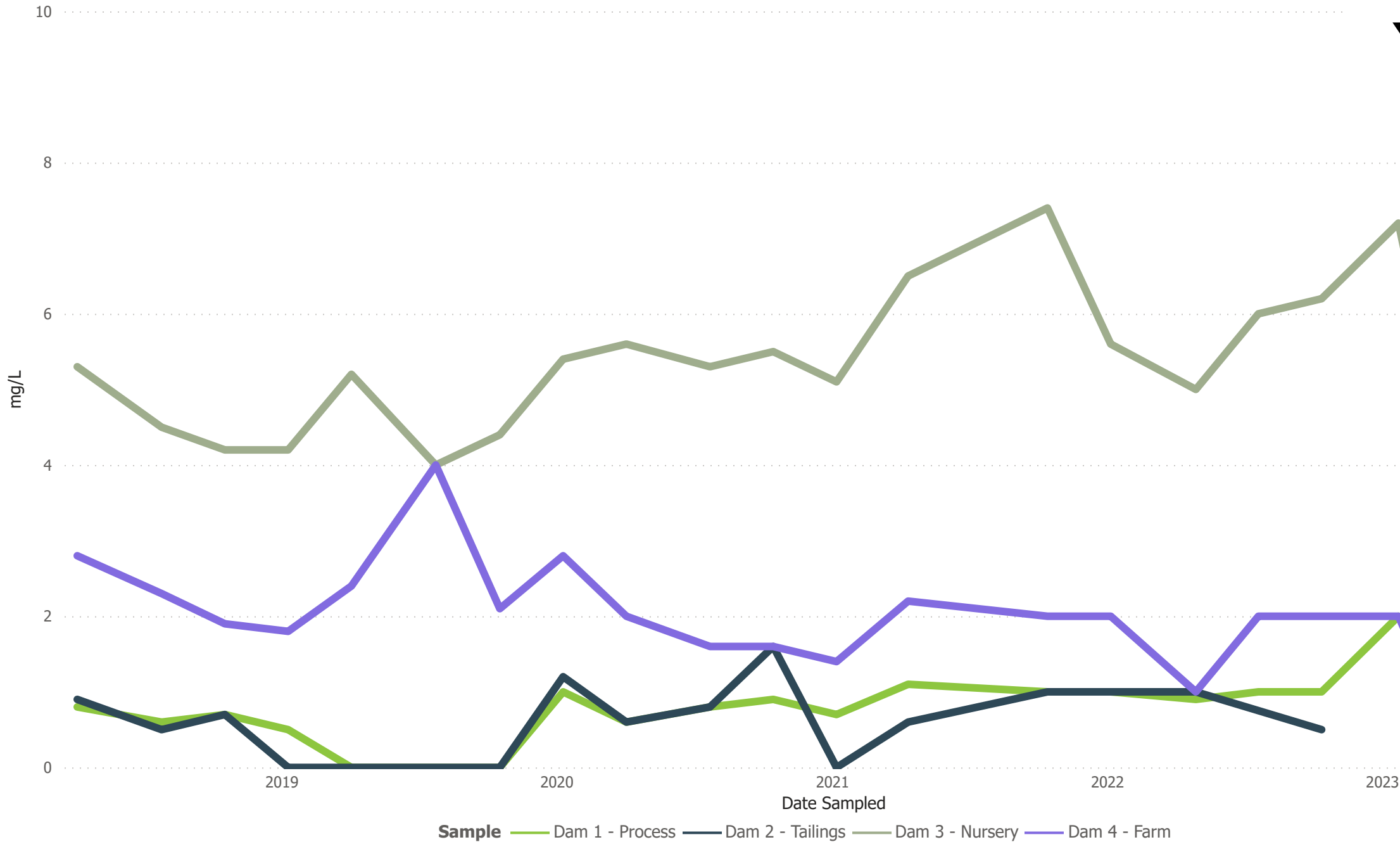
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MW8	23/1/23	4.4	170	110	40	2	0.9	2.0	17	0.0
MW8	21/4/23	4.3	163	100	40	2	0.5	2.0	18	0.0
MW8	14/7/23	4.3	184	110	45	4	0.9	3.0	20	0.0
MW8	5/10/23	4.4	198	120	47	2	2.0	3.0	22	0.0

Water Quality Trends

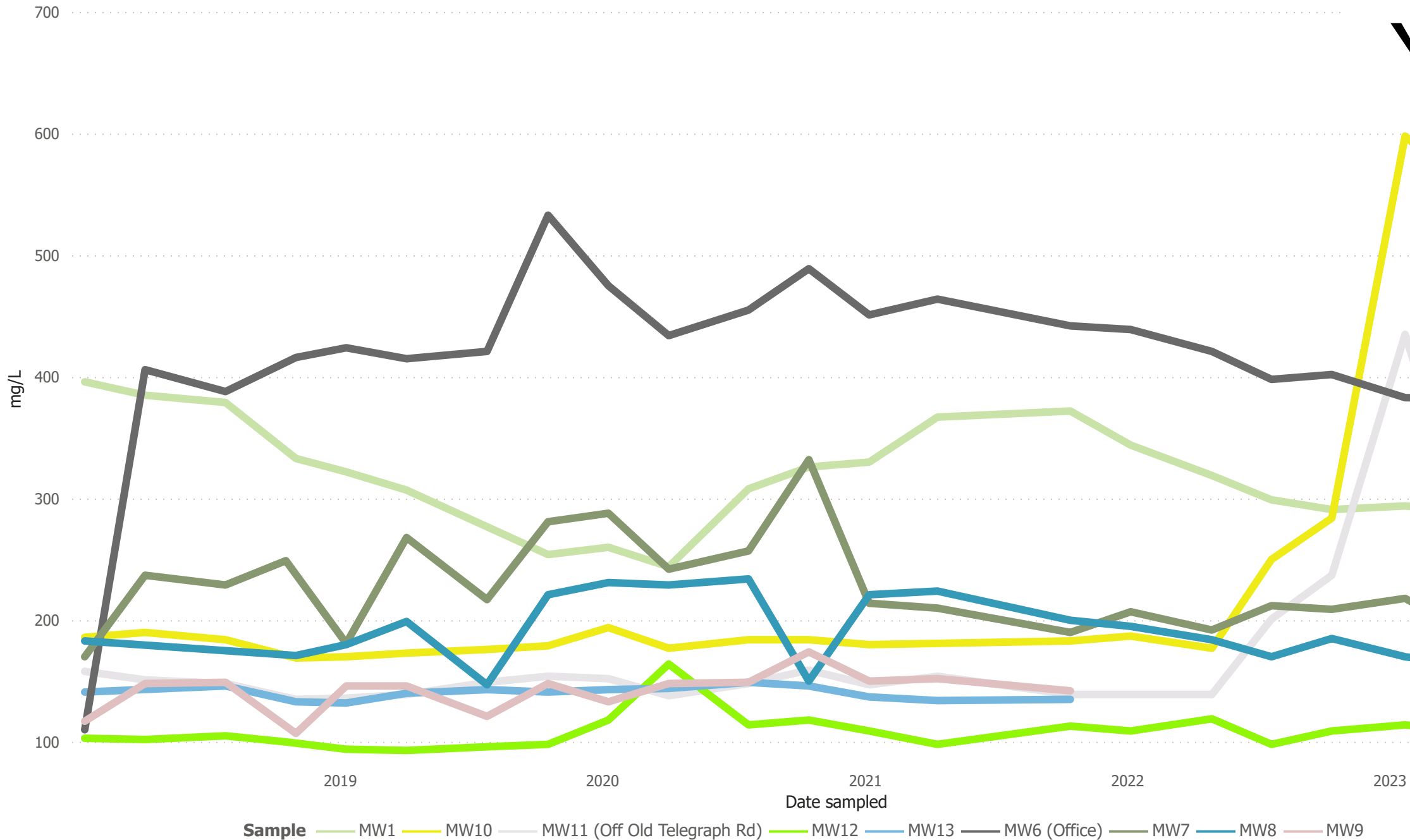
Calcium



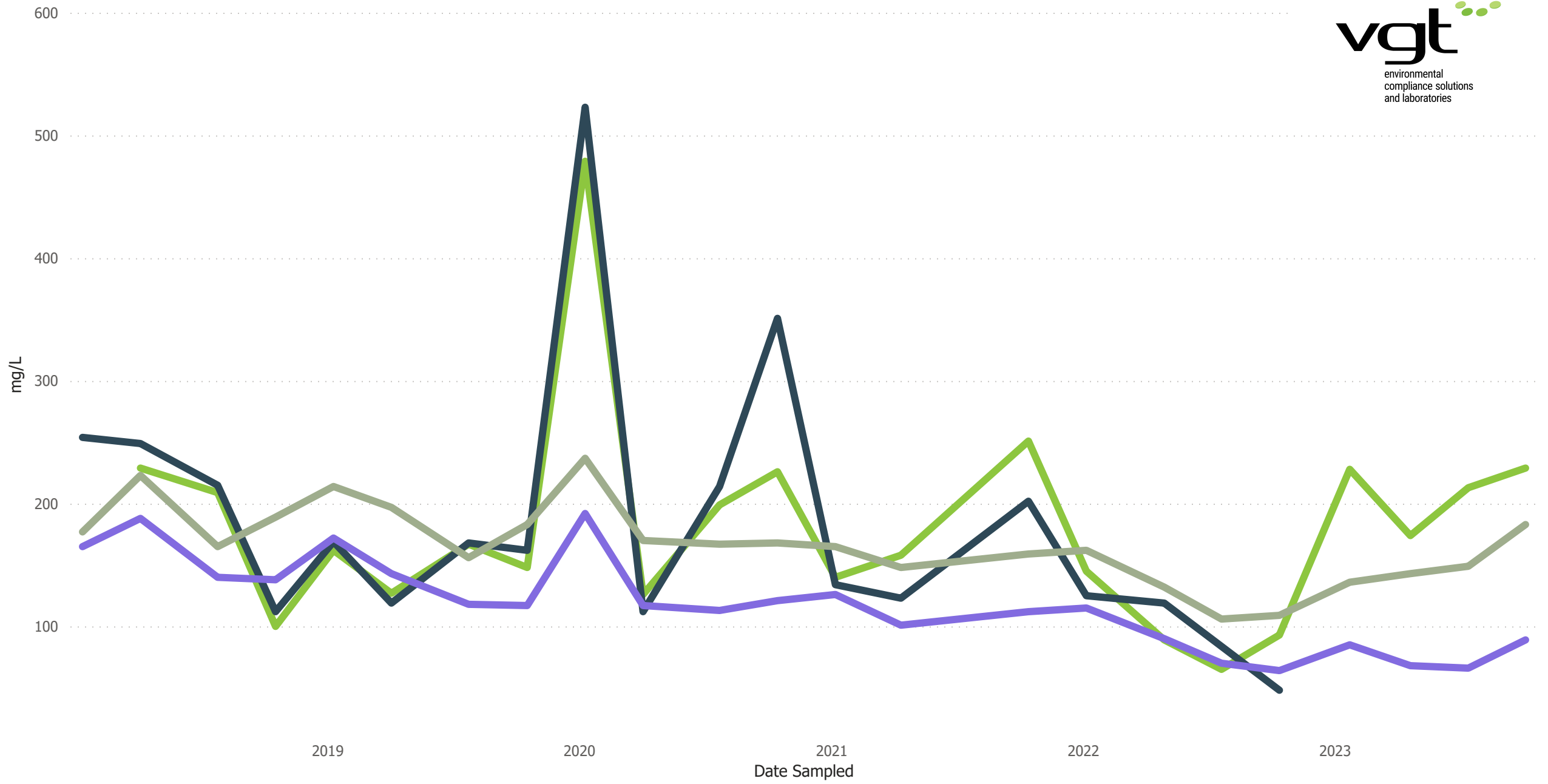
Calcium



Electrical Conductivity

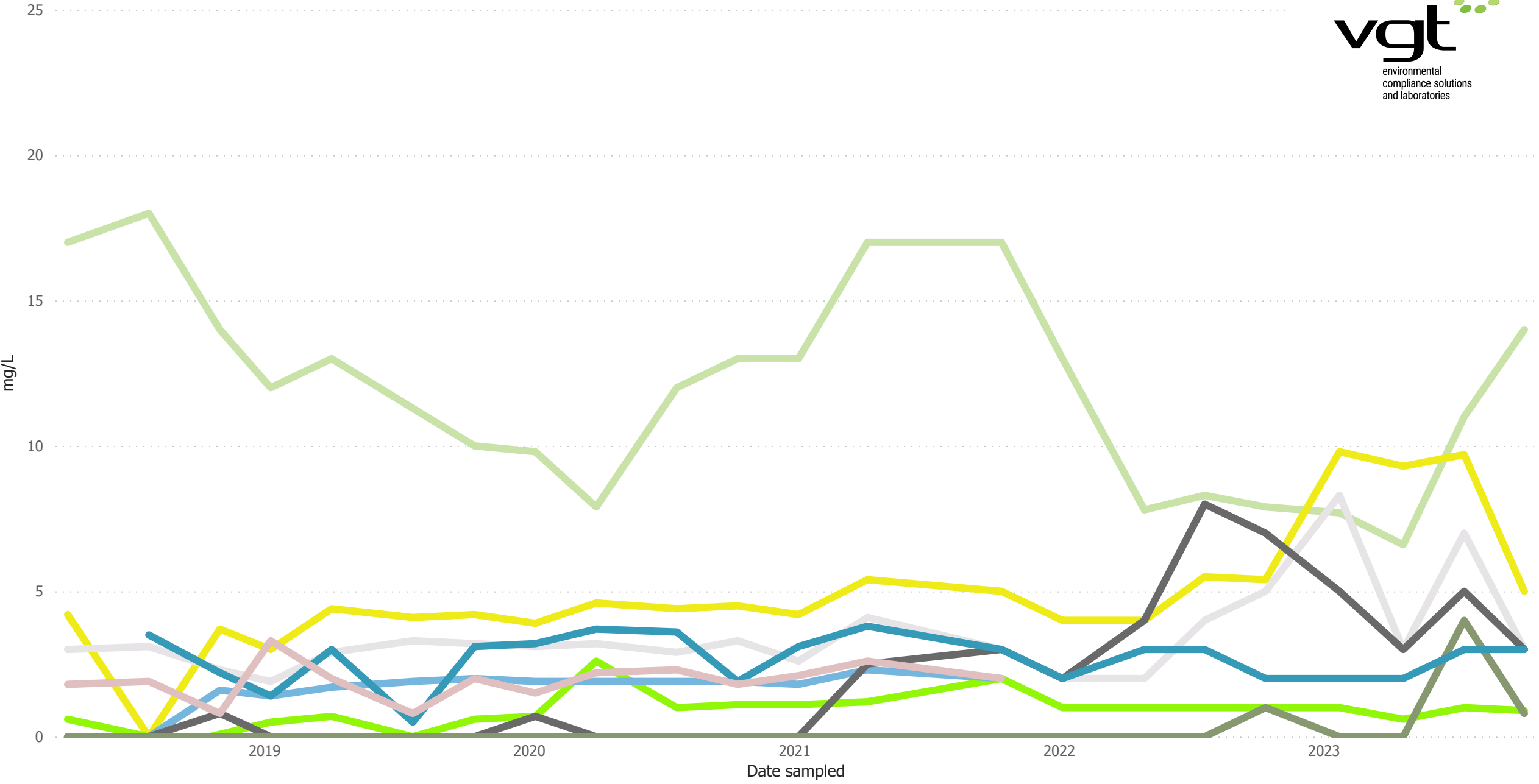


Electrical Conductivity



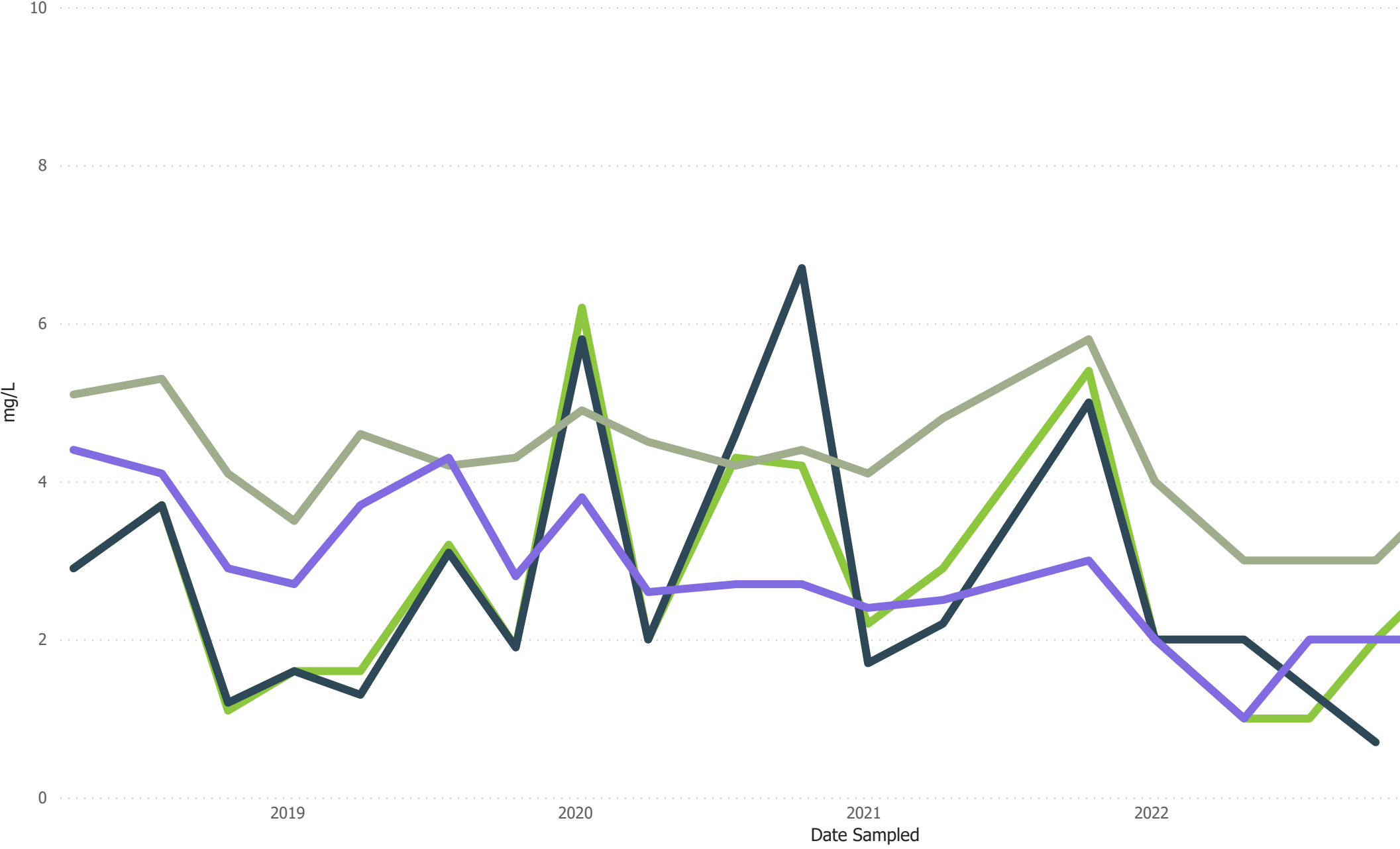
Sample — Dam 1 - Process — Dam 2 - Tailings — Dam 3 - Nursery — Dam 4 - Farm

Magnesium



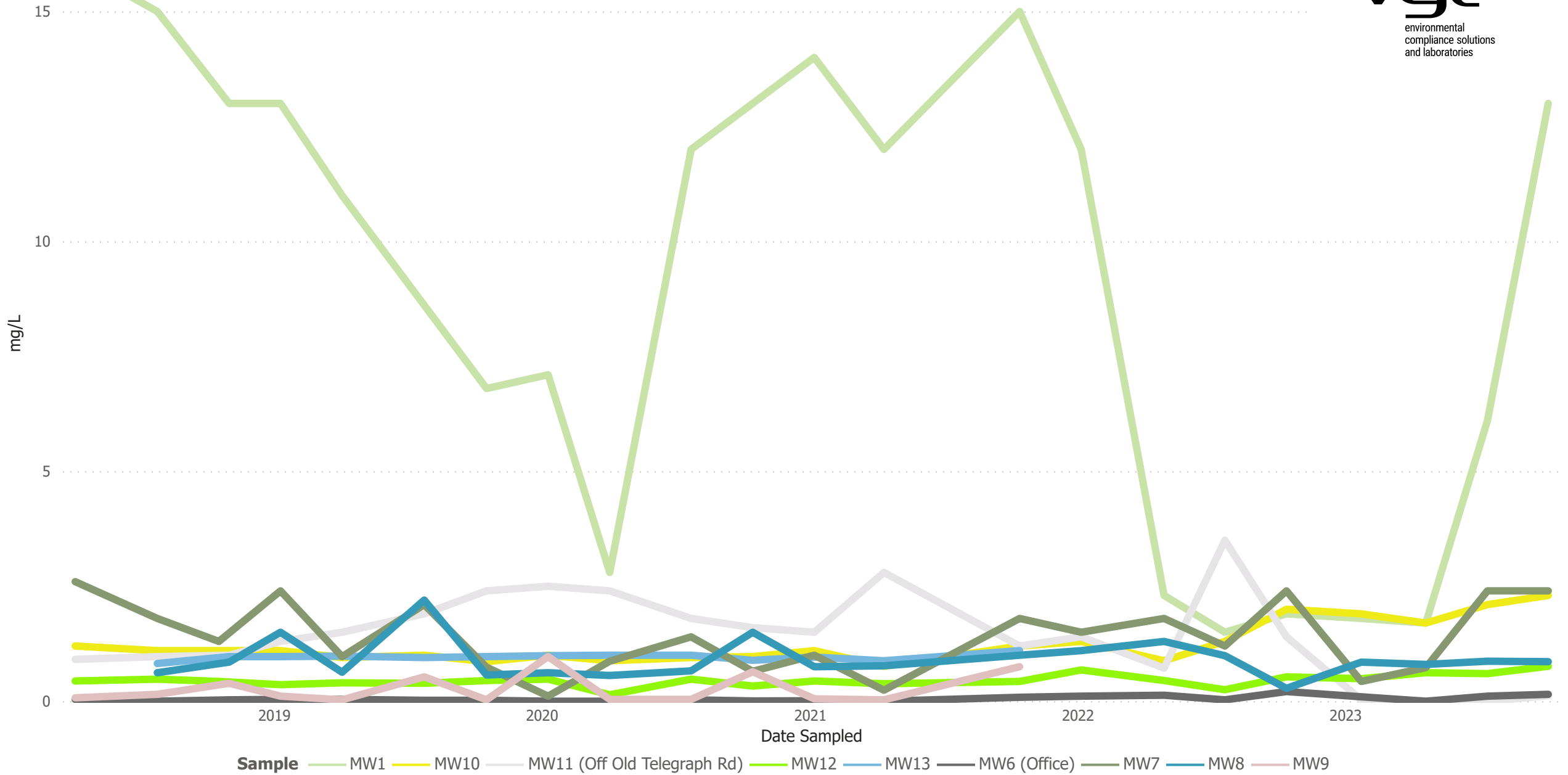
Sample MW1 MW10 MW11 (Off Old Telegraph Rd) MW12 MW13 MW6 (Office) MW7 MW8 MW9

Magnesium

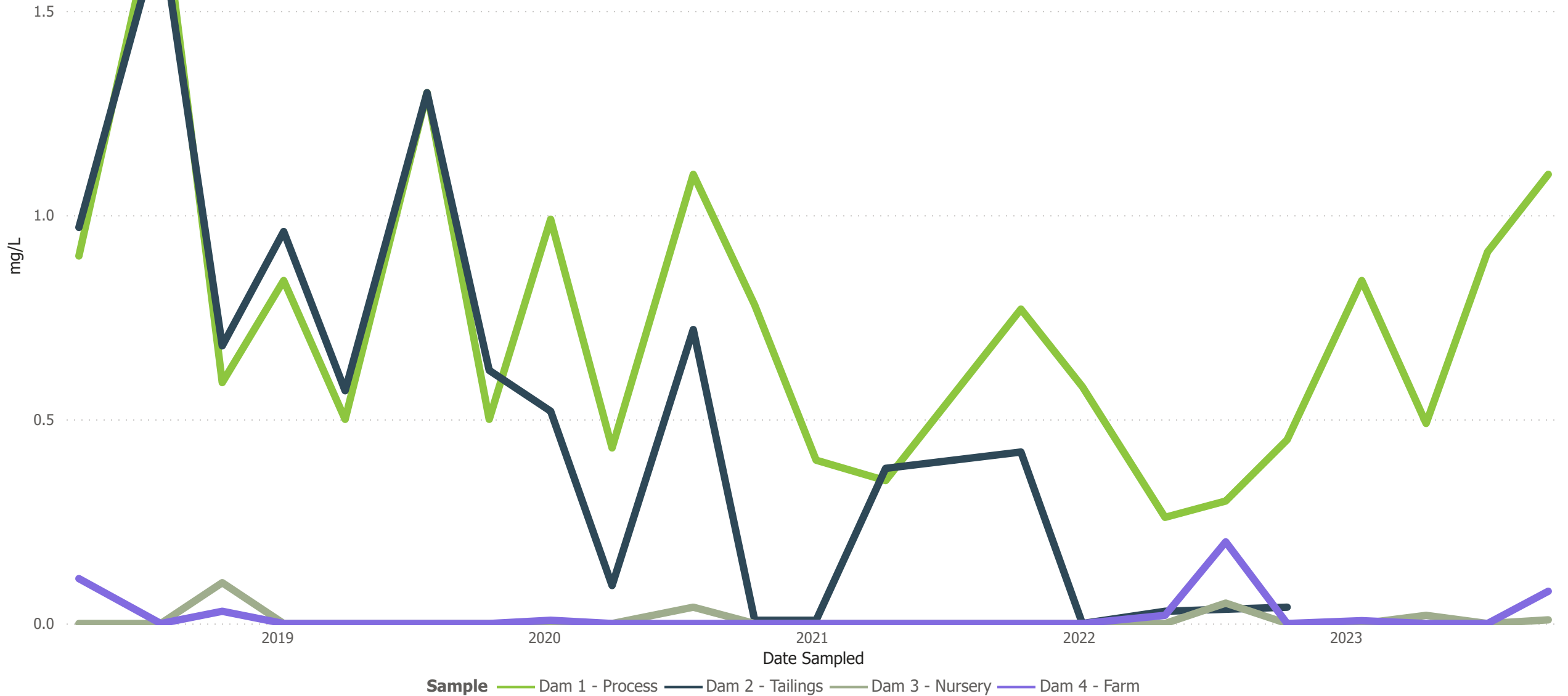


Sample — Dam 1 - Process — Dam 2 - Tailings — Dam 3 - Nursery — Dam 4 - Farm

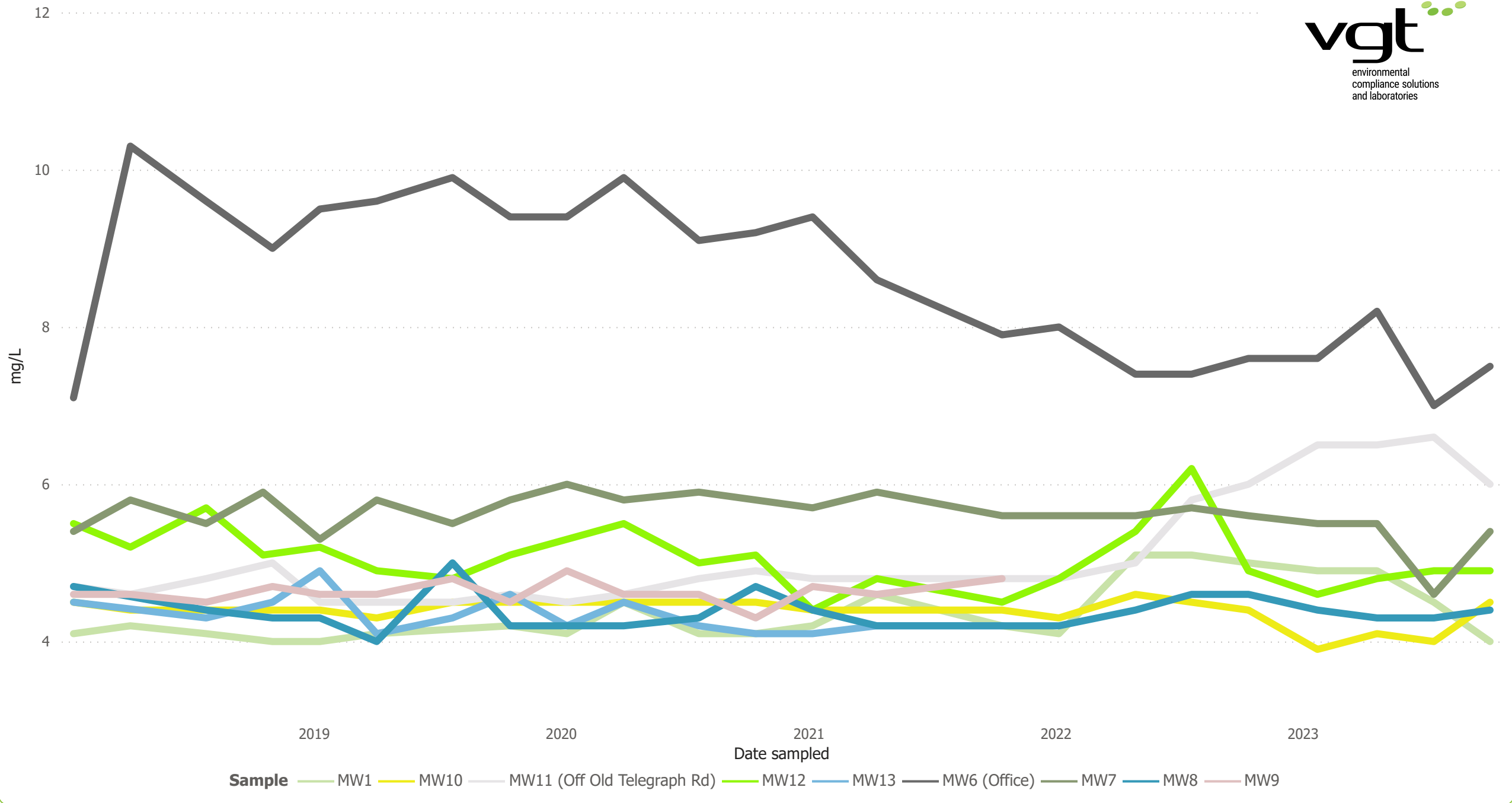
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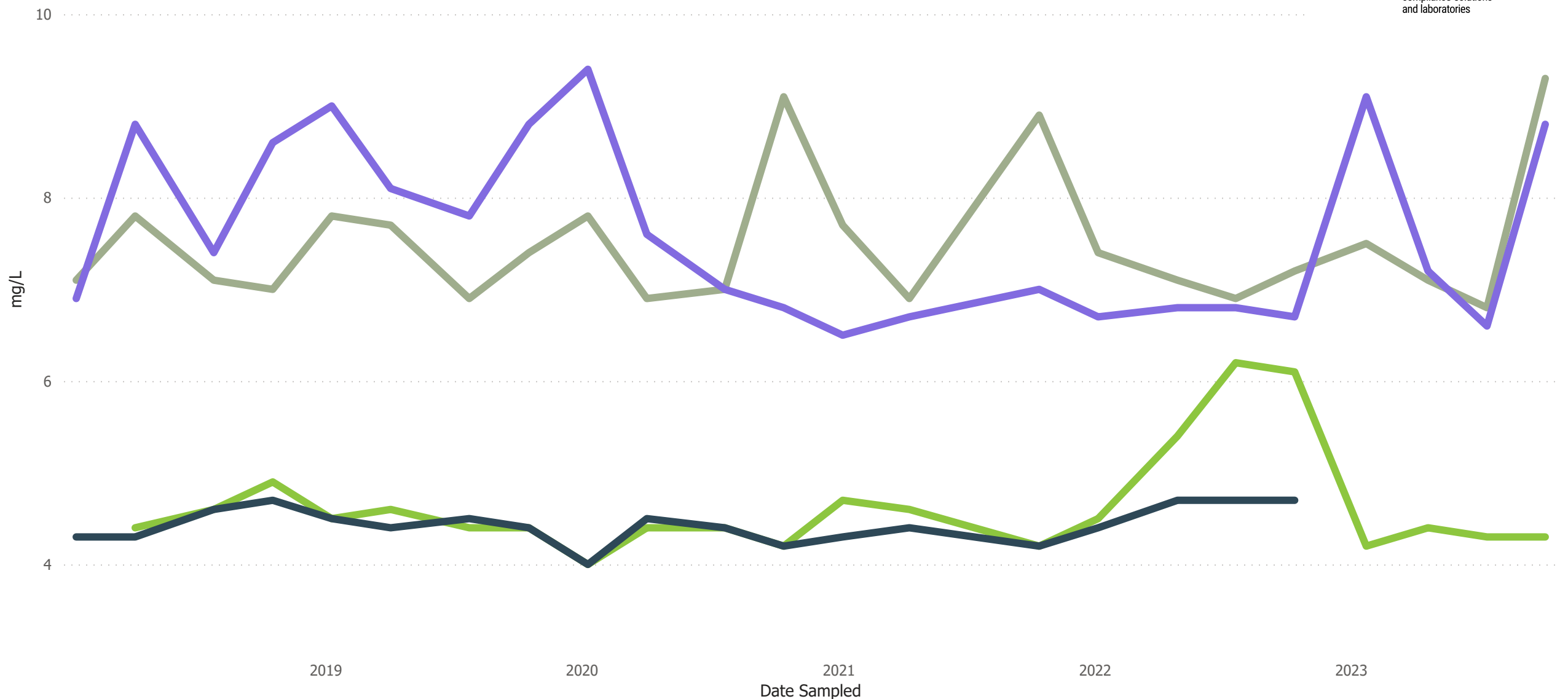
Nitrate as N



pH

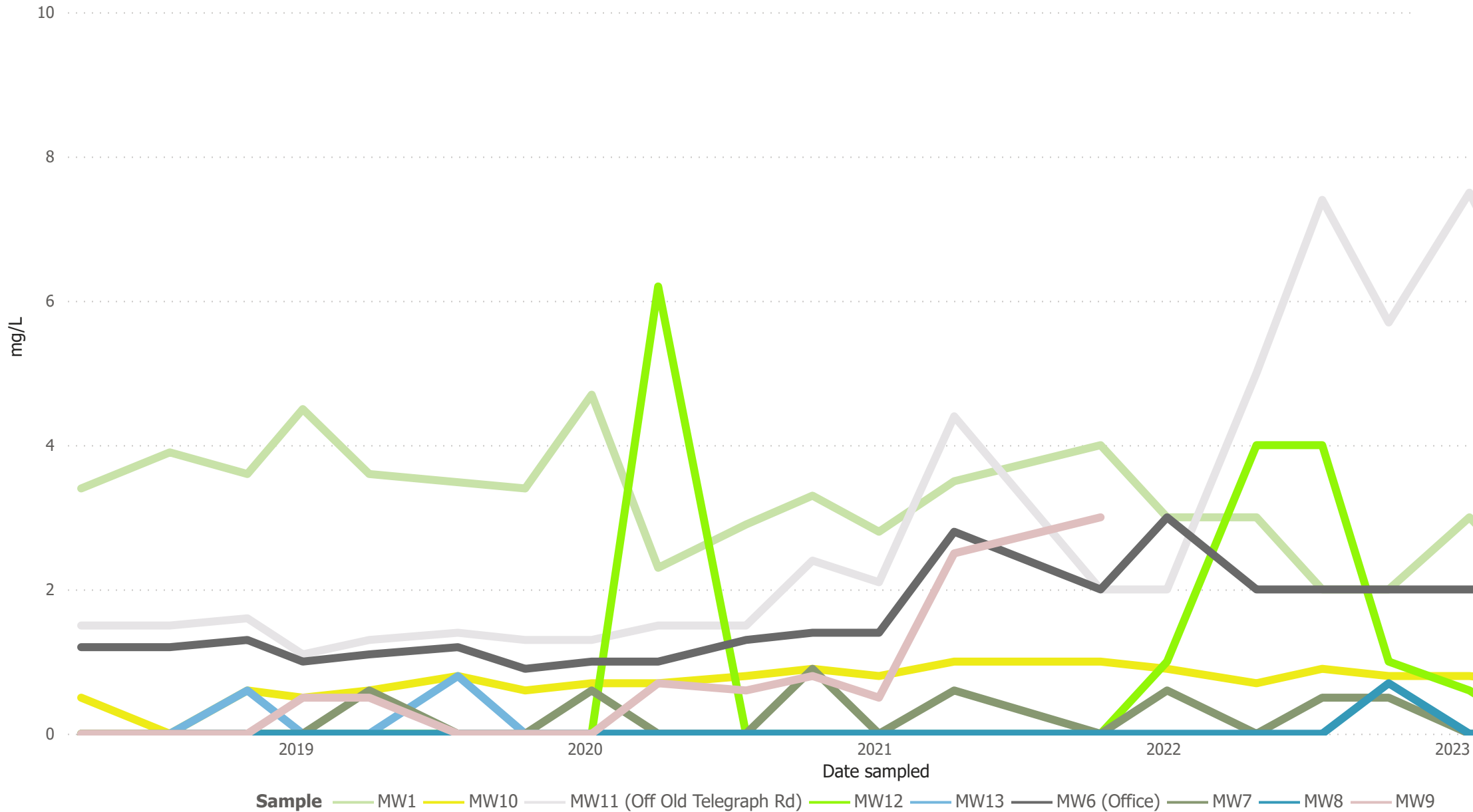


pH

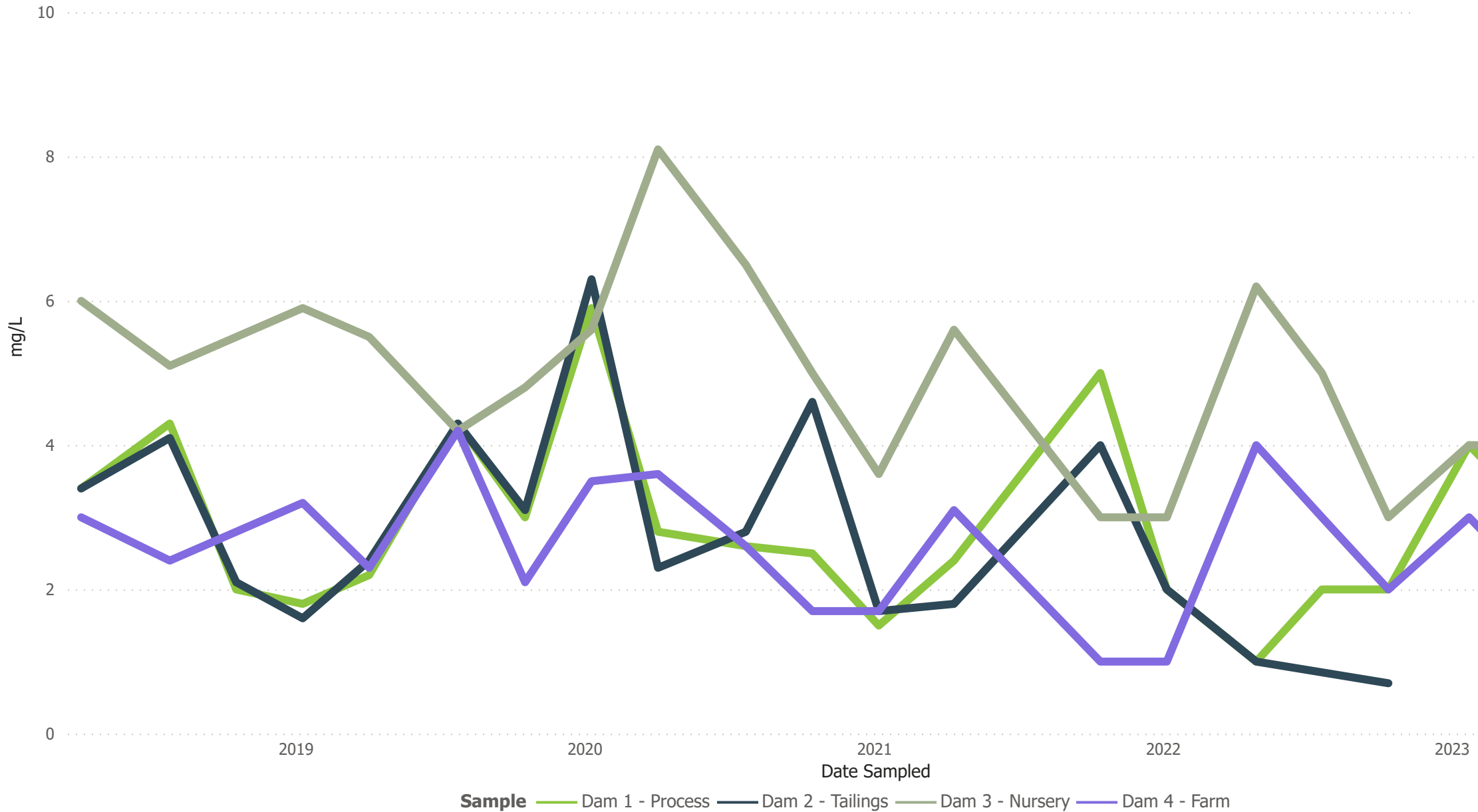


Sample — Dam 1 - Process — Dam 2 - Tailings — Dam 3 - Nursery — Dam 4 - Farm

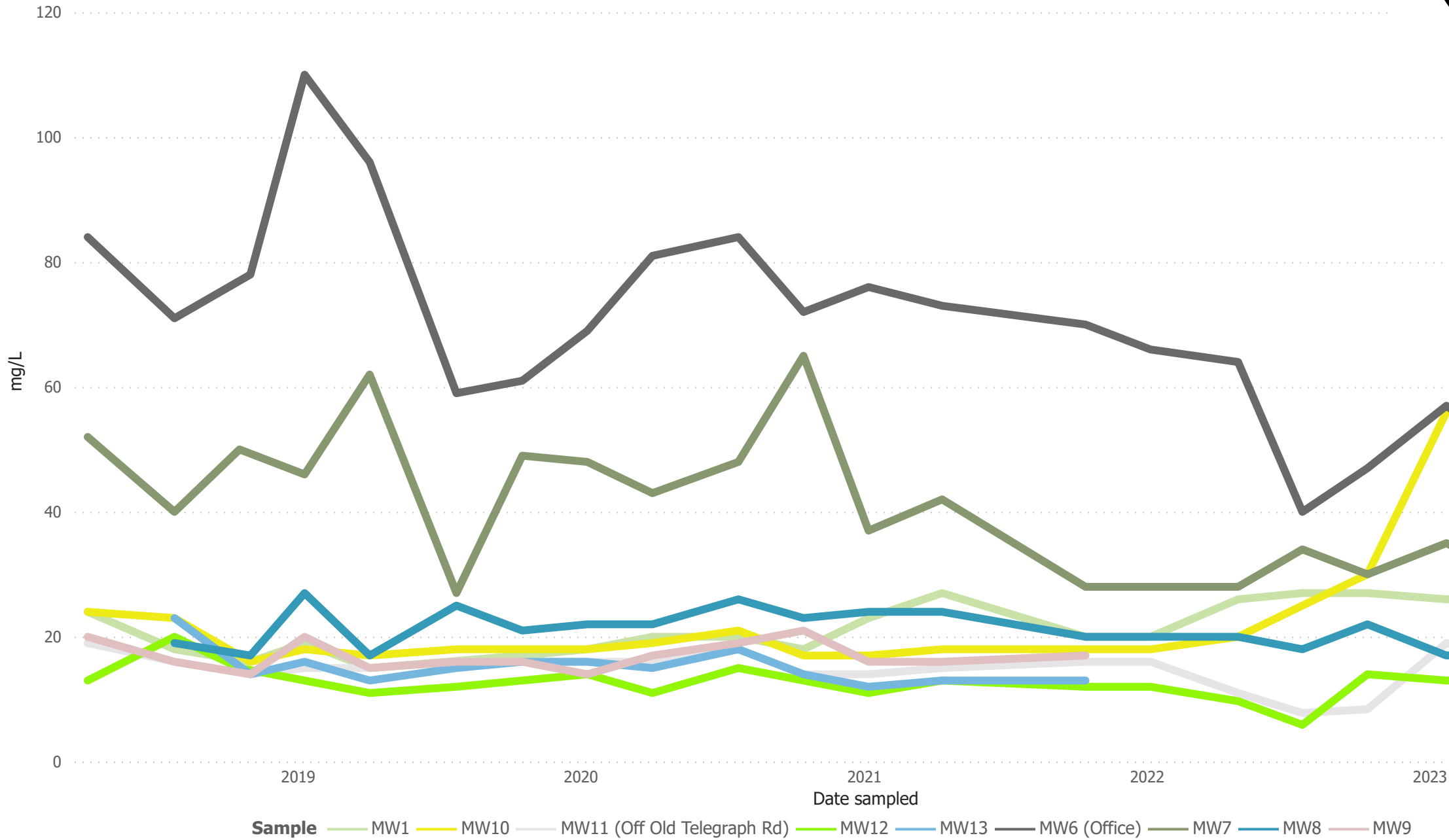
Potassium



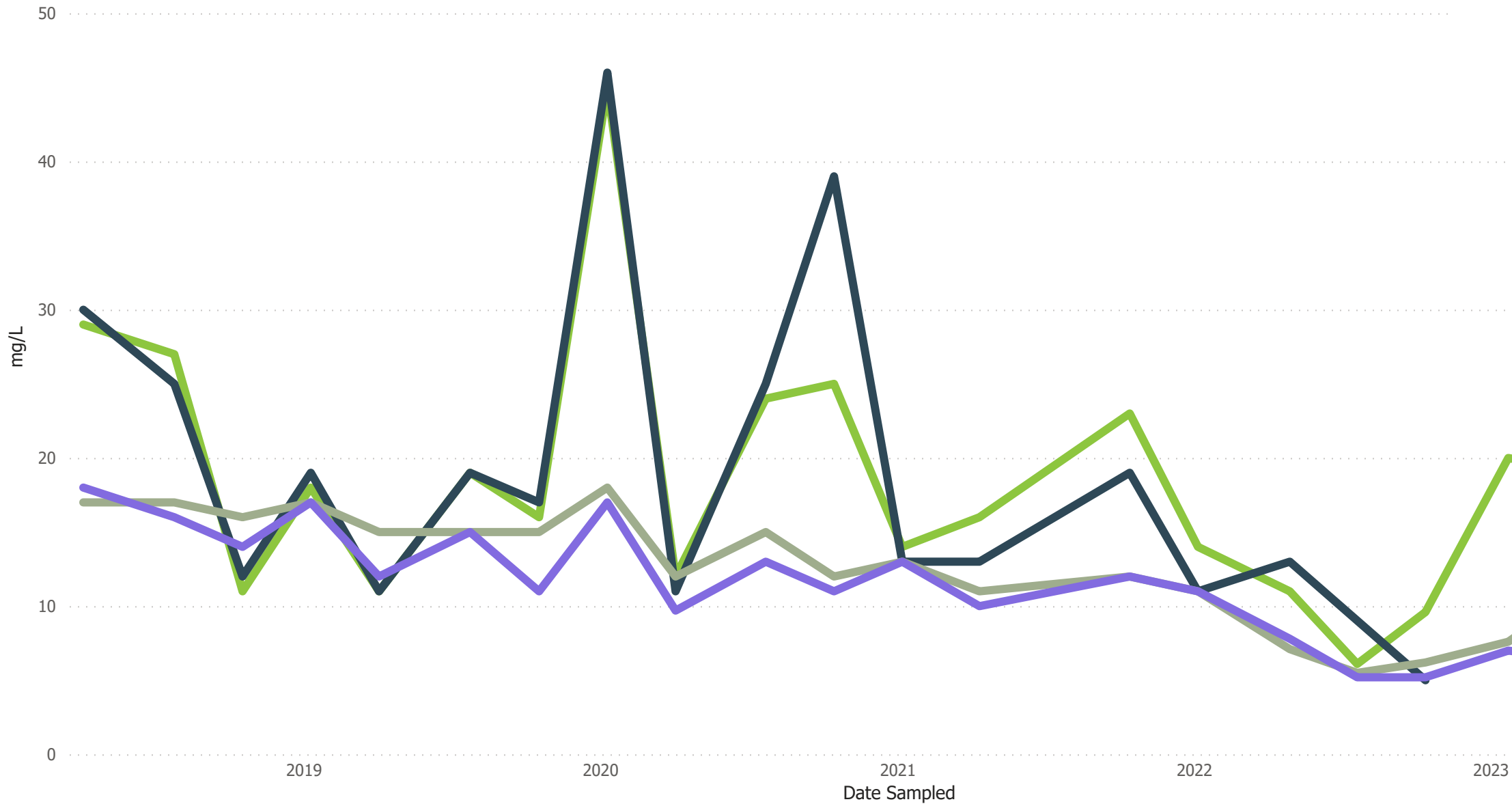
Potassium



Sodium

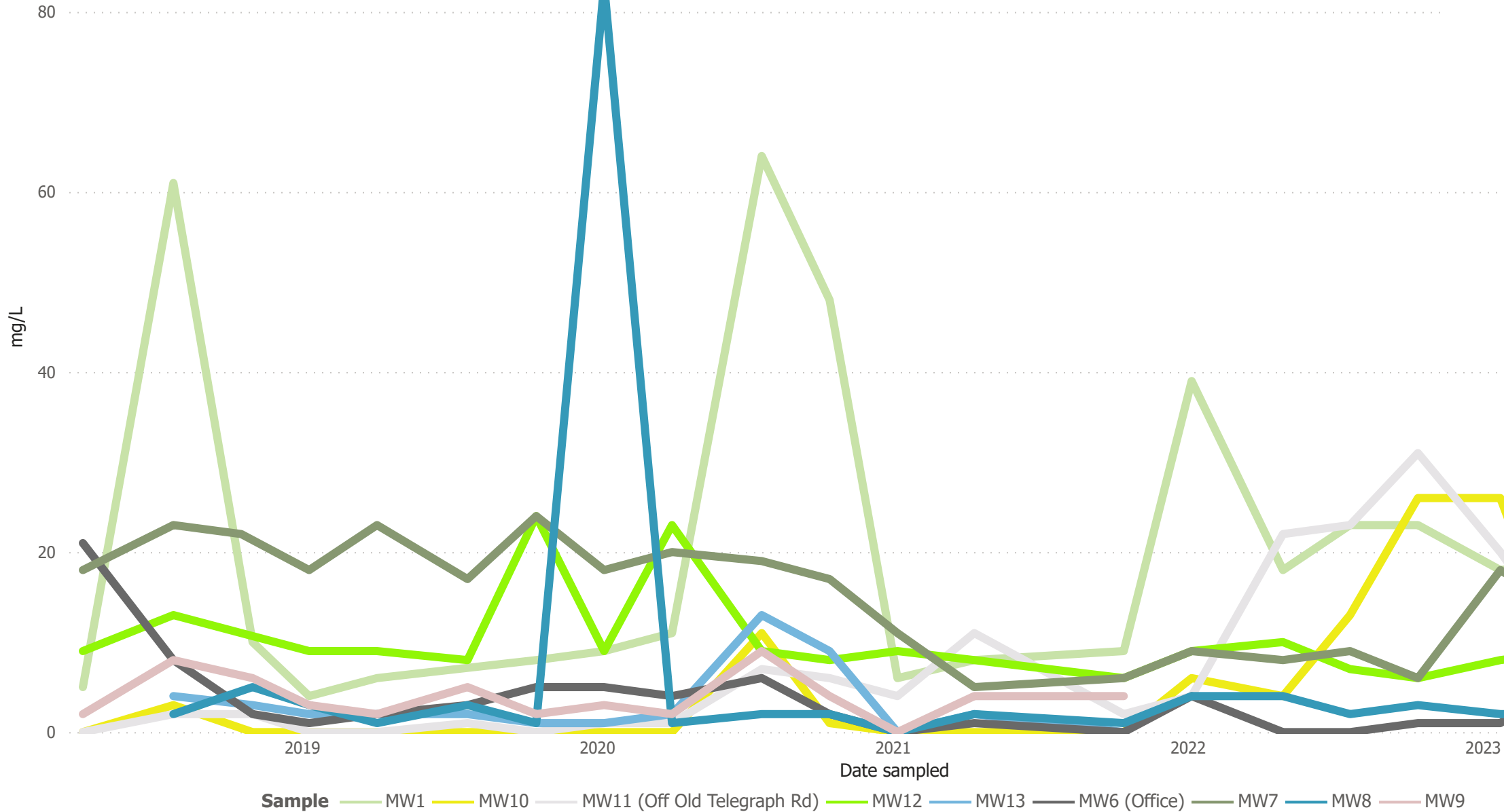


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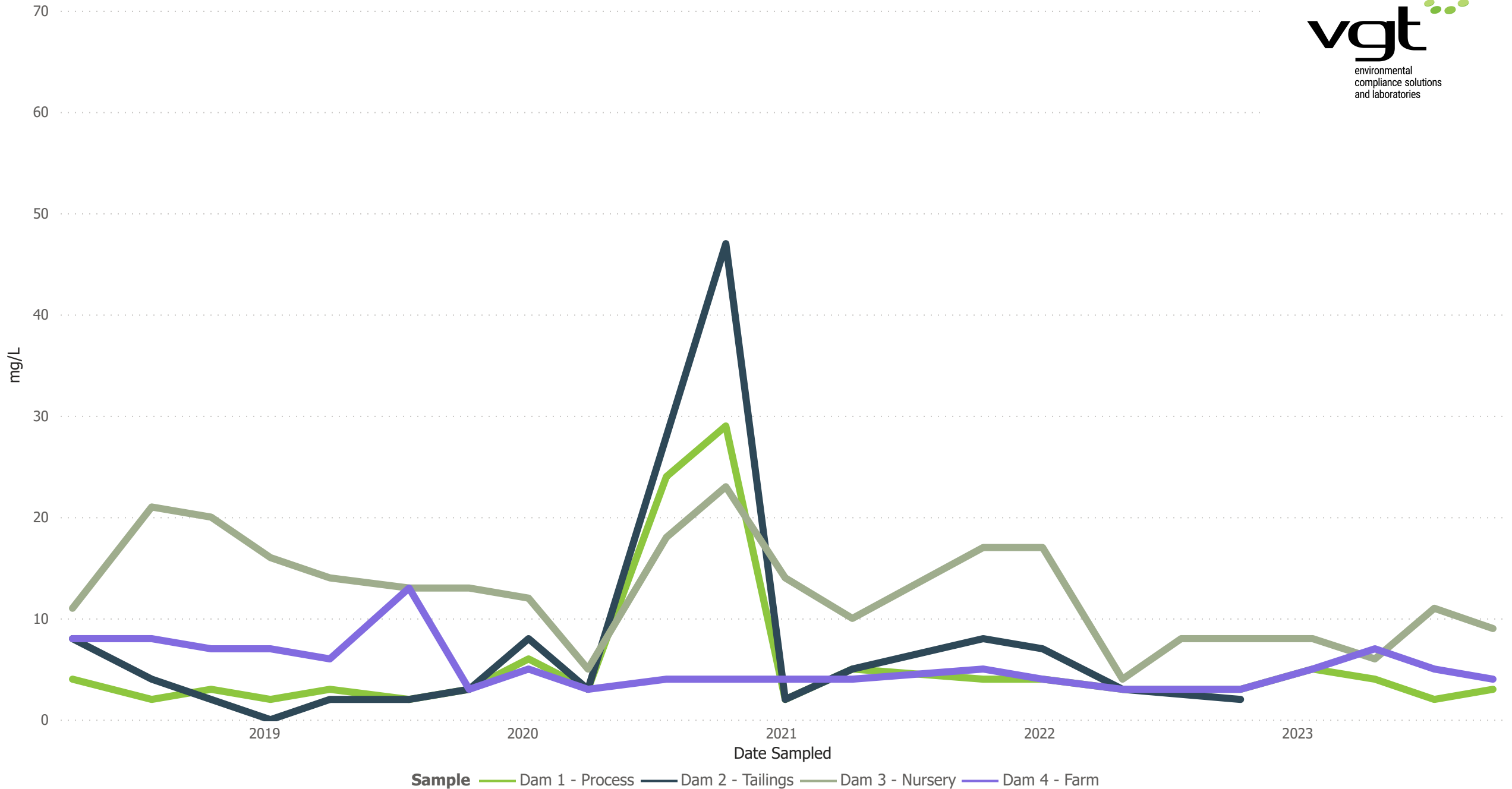


Sample — Dam 1 - Process — Dam 2 - Tailings — Dam 3 - Nursery — Dam 4 - Farm

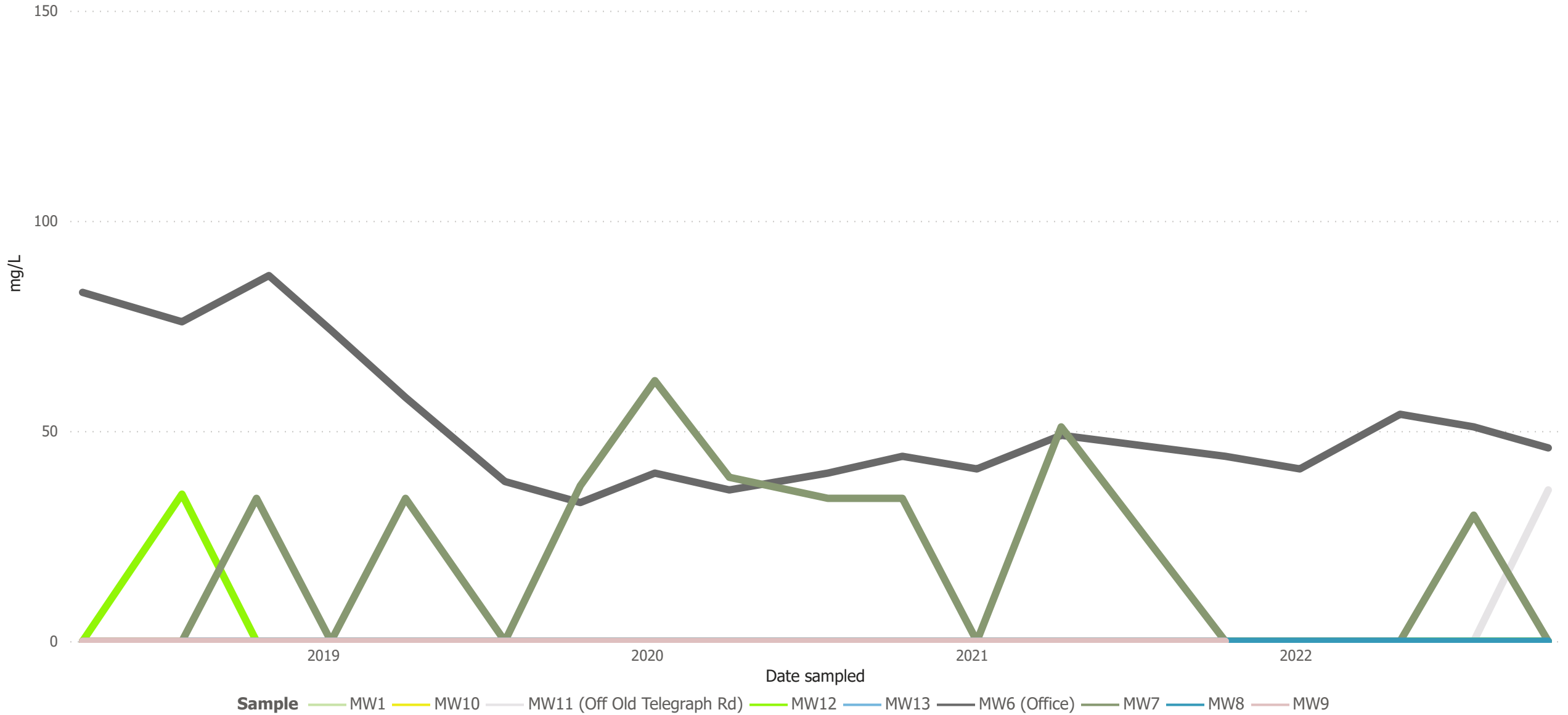
Sulphate



Sulphate



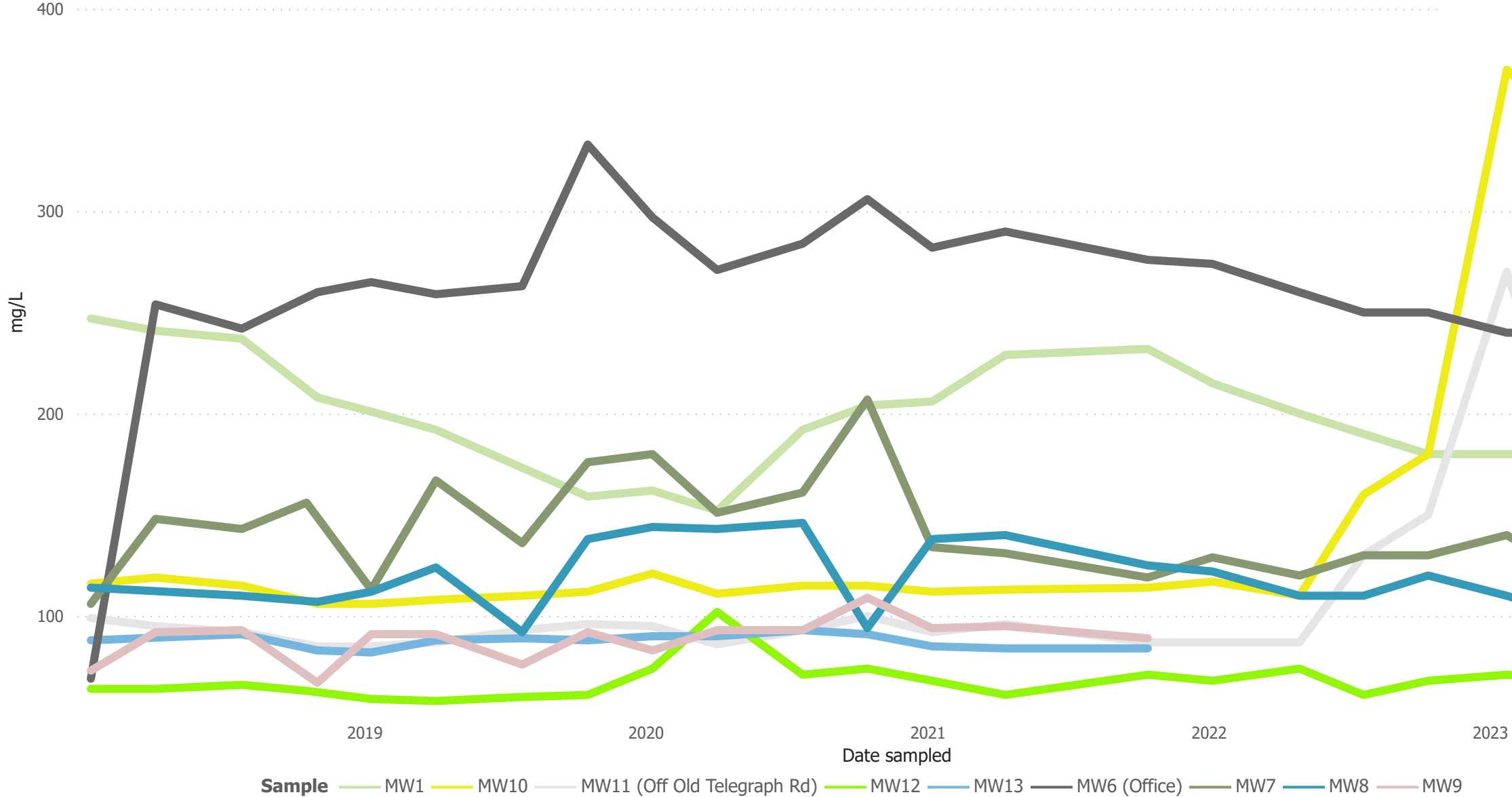
Total Alkalinity



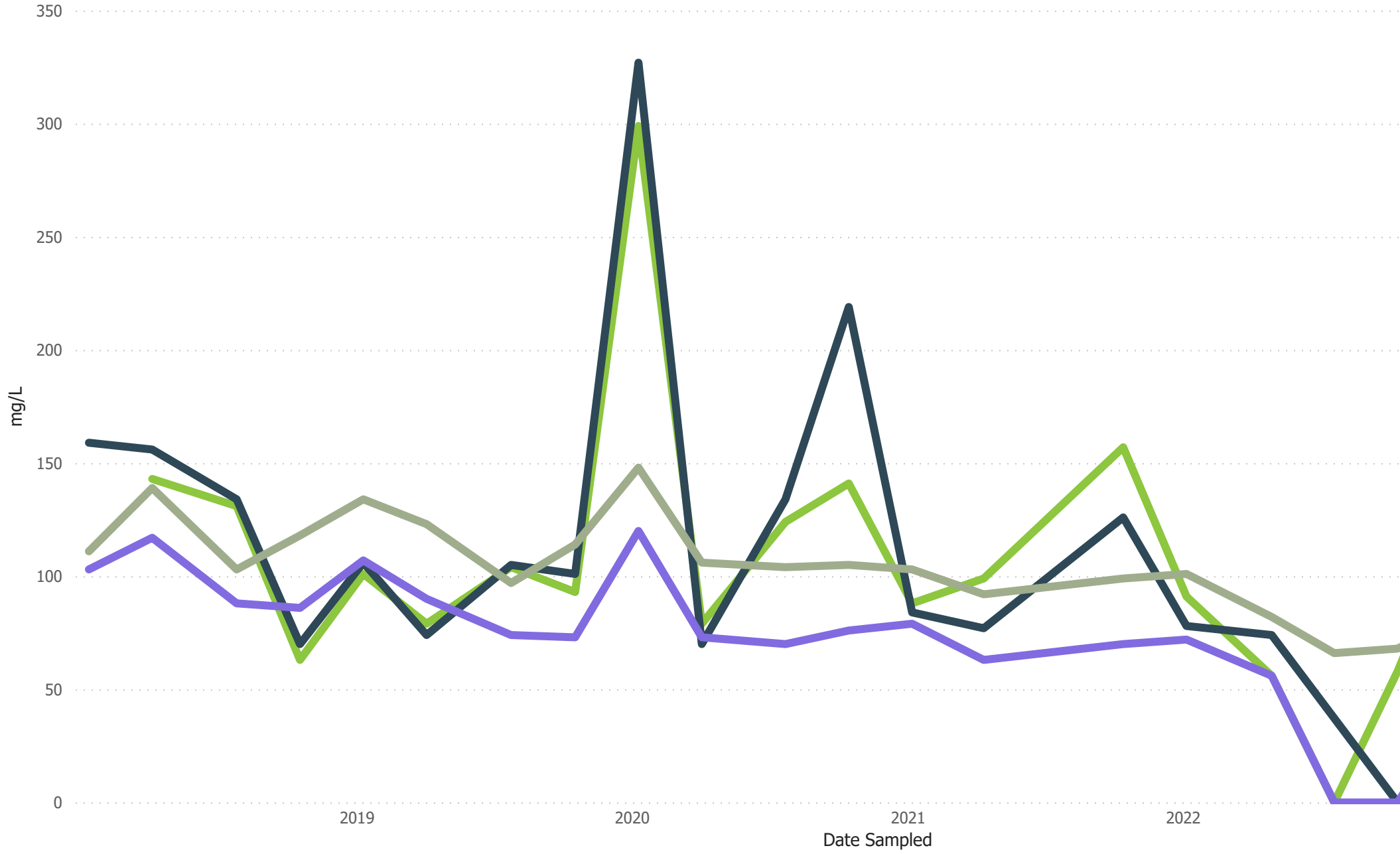
Total Alkalinity



Total Dissolved Solids

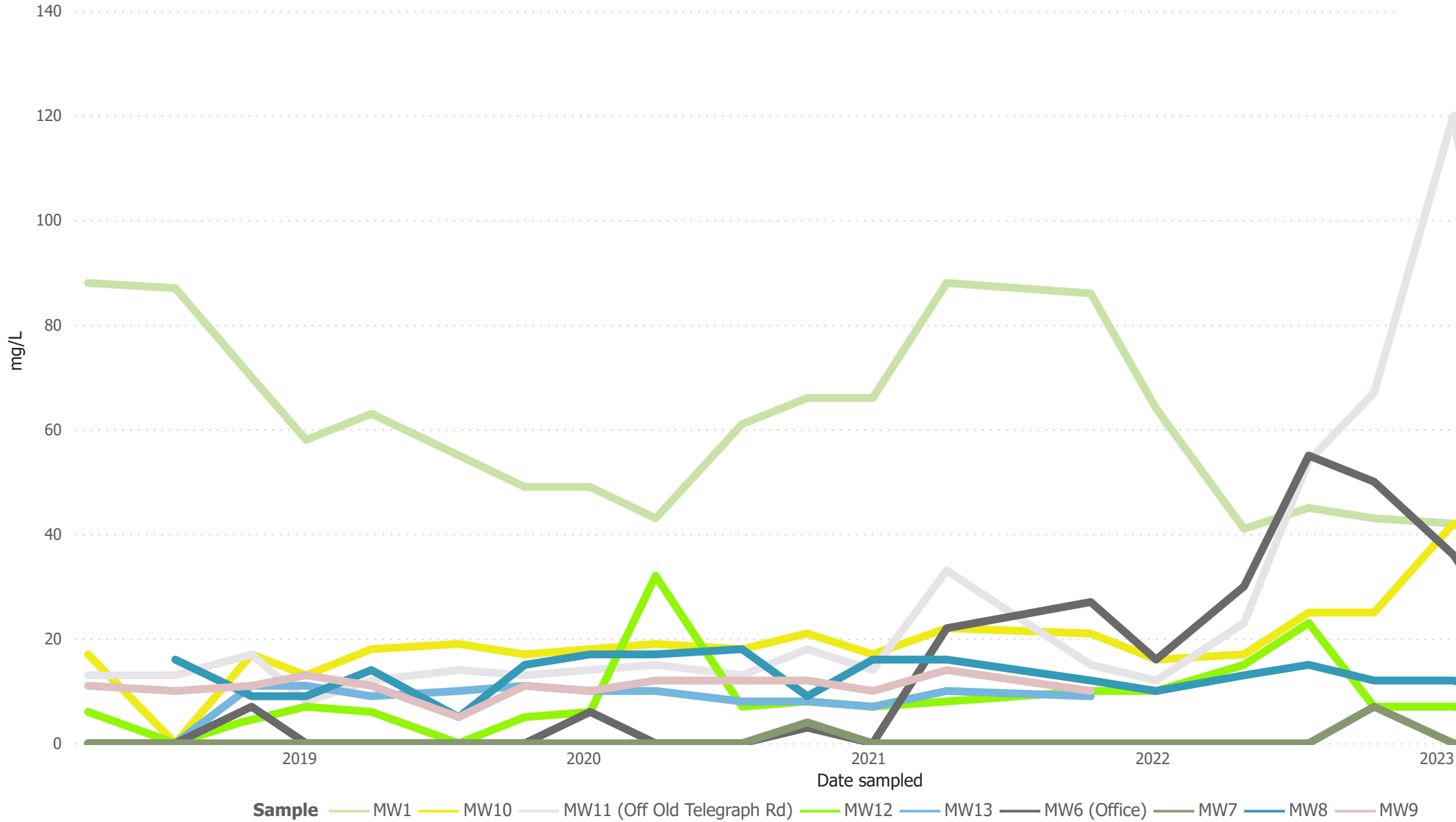


Total Dissolved Solids

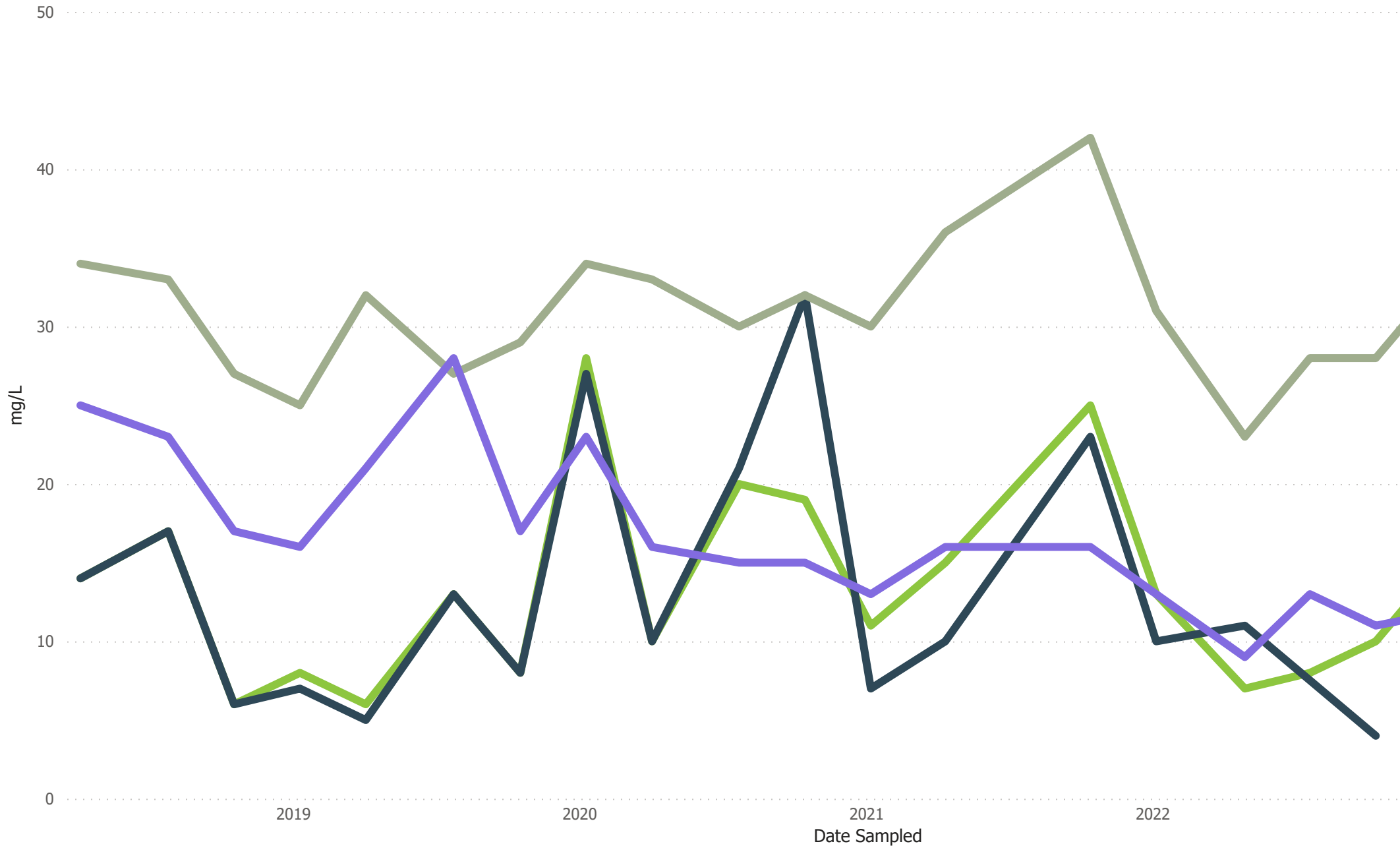


Sample — Dam 1 - Process — Dam 2 - Tailings — Dam 3 - Nursery — Dam 4 - Farm

Total Hardness



Total Hardnes



Sample — Dam 1 - Process — Dam 2 - Tailings — Dam 3 - Nursery — Dam 4 - Farm