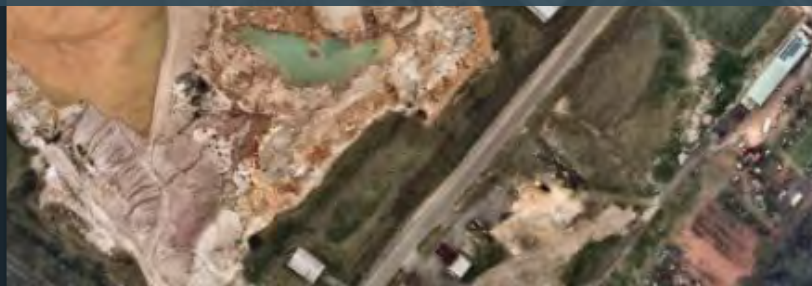




March
2026

**Annual Review and Compliance
Report for
Maroota Sand Quarry
DA 267-11-99
Year Ending 31st December 2025**



COPYRIGHT

© VGT Environmental Compliance Solutions Pty Ltd
and
© Hodgson Quarries & Plant Pty Ltd

All intellectual property and copyright reserved.

Apart from any fair dealing for the purpose of the private study, research, criticism or review, as permitted under the Copyright Act 1968, no part of this report may be reproduced, transmitted, stored in a retrieval system or adapted in any form or by any means (electronic, mechanical, photocopying, recording or otherwise) without written permission. Enquiries should be addressed to VGT Environmental Compliance Solutions Pty Ltd.

DISCLAIMER

This report was prepared in accordance with the scope of services set out in the contract between VGT Environmental Compliance Solutions Pty Ltd (VGT) ABN 26 621 943 888 and the Client and is not to be reproduced except in full. To the best of our knowledge, the report presented herein accurately reflects the Client's intentions when the document was printed. However, the application of conditions of approval or impacts of unanticipated future events could modify the outcomes described in this document. In preparing the report, VGT used data, surveys, analyses, designs, plans and other information provided by individuals and organisations referenced herein. While checks were undertaken to ensure that such materials were the correct and current versions of the materials provided, except as otherwise stated, VGT did not independently verify the accuracy or completeness of these information sources.

Maroota Sand Quarry

Annual Review and Compliance Report 2025

Name of operation	Roberts Rd, Maroota Sand Quarry
Name of operator	Hodgson Quarries and Plant Pty Ltd
Development consent / project approval #	DA 267-11-99
Name of holder of development consent / project approval	Dr L. S. Martin
Annual Review start date	01/01/2025
Annual Review end date	31/12/2025
I, Sinead Kelly, certify that, to the best of my knowledge, this audit report is a true and accurate record of the compliance status of Roberts Rd, Maroota Sand Quarry for the period 1/1/2025 to 31/12/2025 and that I am authorised to make this statement on behalf of Hodgson Quarries and Plant Pty Ltd. <i>Note.</i> a) The Annual Review is an 'environmental audit' for the purposes of section 122B(2) of the Environmental Planning and Assessment Act 1979. Section 122E provides that a person must not include false or misleading information (or provide information for inclusion in) an audit report produced to the Minister in connection with an environmental audit if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, \$1 million and for an individual, \$250,000. b) The Crimes Act 1900 contains other offences relating to false and misleading information: section 192G (Intention to defraud by false or misleading statement—maximum penalty 5 years imprisonment); sections 307A, 307B and 307C (False or misleading applications/information/documents—maximum penalty 2 years imprisonment or \$22,000, or both).	
Name of authorised reporting officer	Sinead Kelly
Title of authorised reporting officer	Environmental Consultant
Signature of authorised reporting officer	

Revision Table

Date	Version	Author	Reviewed	Approved
24/03/2026	D0	SK	GVT	
30/03/2026	F0	SK	SR/MH	SR

Contents

1	Executive Summary	7
2	Conditions Compliance	8
2.1	Actions to Address Previous Non-compliances	8
2.1.1	Updating of Plans and Strategies	8
2.2	Actions Required from Previous Reports	8
2.2.1	Annual Review and Compliance Report 2024	8
3	Introduction	9
3.1	Project Site	9
3.2	Background	9
3.3	Quarry Contacts	9
4	Approvals	11
4.1	Department of Planning and Environment	11
4.1.1	Report Requirements	11
4.2	Environmental Protection Authority (EPA)	12
4.3	Water NSW, NSW Department of Planning & Environment - Water (DPE-W) and National Resources Access Regulator (NRAR)	12
5	Operations Description	14
5.1	Operations 2025 Calendar Year	18
5.2	Transport and Truck Movements	18
5.2.1	Compliance Requirements	18
5.2.2	Monitoring Results and Compliance Trends	19
5.3	Material Importation	20
5.3.1	Compliance Requirements	20
5.3.2	Monitoring Results and Compliance Trends	20
5.4	Complaints and Community Consultation	22
5.5	Proposed Operations 2026 Calendar Year	22
6	Environmental Management	23
6.1	Waste Management	23
6.2	Climate Summary	23
6.3	Air Quality	25
6.3.1	Requirements and Predictions	25
6.3.2	Monitoring Results Compliance and Trends	26
6.3.3	Interpretation and Effectiveness of Controls	30
6.3.4	Measures Proposed for Improvement	32
6.4	Surface Water, Sediment and Erosion	34
6.4.1	Requirements and Predictions	34
6.4.2	Monitoring Results Compliance and Trends	35
6.4.3	Interpretation and Effectiveness of Controls	46
6.4.4	Measures Proposed for Improvement	46
6.5	Groundwater	47
6.5.1	Requirements and Predictions	47
6.5.2	Monitoring Results Compliance and Trends	47
6.5.3	Wet Weather High Groundwater Level	59
6.5.4	Interpretation and Effectiveness of Controls	61
6.5.5	Measures Proposed for Improvement	61
6.6	Site Water Balance	63
6.6.1	Requirements and Predictions	63
6.6.2	Monitoring Results Compliance and Trends	63
6.6.3	Interpretation and Effectiveness of Controls	64
6.6.4	Measures Proposed for Improvement	64
6.7	Process Water Dam	64
6.7.1	Requirements and Predictions	65
6.7.2	Monitoring Results Compliance and Trends	65
6.7.3	Interpretation and Effectiveness of Controls	65
6.7.4	Measures Proposed for Improvement	65
6.8	Noise and Road Noise	65
6.8.1	Requirements and Predictions	65

6.8.2	Monitoring Results Compliance and Interpretation	68
6.8.3	Trends and Effectiveness of Controls	70
6.8.4	Measures Proposed for Improvement	71
6.9	Flora and Fauna	72
6.9.1	Requirements and Predictions	72
6.9.2	Monitoring Results Compliance and Trends	72
6.9.3	Interpretation and Effectiveness of Controls	72
6.9.4	Measures Proposed for Improvement	72
6.10	Rehabilitation	74
6.10.1	Requirements and Predictions	74
6.10.2	Monitoring Results Compliance and Trends	85
6.10.3	Interpretation and Effectiveness of Controls	85
6.10.4	Measures Proposed for Improvement	85
7	Management Targets and Strategies for Future Stages	86
8	Opportunities for Improvement	87
8.1	Water Management Plan Updates	87
8.2	Rehabilitation Conservation Bond	87
8.3	Independent Audit	87
8.4	Actions and Improvements Planned for 2024	88

Tables

Table 1.	Review Requirements	11
Table 2.	Relevant Water Licences Summary	13
Table 3.	Operational Hours	18
Table 4.	Traffic and Transport Monitoring Measures	18
Table 5.	Annual Production Last 5 Years	19
Table 6.	Max Daily Production Trucks This Report Period	20
Table 7.	Annual VENM / ENM Importation Trends Last 5 Years	21
Table 8.	Max Daily Importation Trucks This Report Period	21
Table 9.	Rainfall Summary	23
Table 10.	Air Quality Criteria	25
Table 11.	Dust Deposition Gauge Results	26
Table 12.	Particulate Matter Annual Averages	28
Table 13.	Max 24 Hour Particulate Matter Averages	29
Table 14.	24Hr Exceedances	29
Table 15.	Effectiveness of Air Quality Management Controls	31
Table 16.	Monitoring and Maintenance from the WMP 2022	34
Table 17.	Surface Water Quality Results Dam 1 – Process	36
Table 18.	Surface Water Quality Results Dam 2 – Tailings	37
Table 19.	Surface Water Quality Results Dam 3 – Nursery	38
Table 20.	Surface Water Quality Results Dam 4 - Farm	39
Table 21.	Groundwater Monitoring Bores	47
Table 22.	Groundwater Level Monitoring	47
Table 23.	Groundwater Quality Results – MW1	52
Table 24.	Groundwater Quality Results – MW6	53
Table 25.	Groundwater Quality Results – MW7	54
Table 26.	Groundwater Quality Results – MW8	55
Table 27.	Groundwater Quality Results – MW10	56
Table 28.	Groundwater Quality Results – MW11	57
Table 29.	Groundwater Quality Results – MW12	58
Table 30.	Groundwater Depth Changes with Rainfall Event	59
Table 31.	Operational Noise Criteria (dB(a))	66
Table 32.	Noise-related Conditions	66
Table 33.	Predicted Noise Impacts, 2015 LAeq,15min (dBA)	68
Table 34.	Predicted Noise Impacts, Mod 4 LAeq,15min (dBA)	68
Table 35.	Operator-Attended Noise Survey Results	69
Table 36.	Road Noise Survey Results	70
Table 37.	Sound Power of Equipment	70
Table 38.	Effectiveness of Noise Management Controls	71
Table 39.	Flora and Fauna Management Conditions	72

Table 40.	Flora and Fauna Management Objectives and Targets	72
Table 41.	Recommended Weed Control	73
Table 42.	Rehabilitation Performance Indicators and Completion Criteria	75
Table 43.	Future Targets	86
Table 44.	2023 Independent Audit Recommendations	87
Table 45.	Summary of Proposed Improvements	88

Figures

Figure One.	Location	10
Figure Two.	Sequence of Extraction	15
Figure Three.	Site Monitoring Locations	16
Figure Four.	Site Layout	17
Figure Five.	Maroota Sands Water Levels (Dundon- September 2017)	49
Figure Six.	Wet Weather High Groundwater Level	62

Appendices

Appendix A	Notice of Modification and draft Consolidated Consent Conditions Mod 4
Appendix B	Environmental Protection Licence 6535
Appendix C	Water Licence Conditions
Appendix D	Complaints Register
Appendix E	Environmental Monitoring Summaries
Appendix F	Air Quality Sampling Procedures
Appendix G	Pumping Records
Appendix H	Noise Monitoring Results
Appendix I	Biodiversity Monitoring Report
Appendix J	Weed Management Reports
Appendix K	Example of Checklists
Appendix L	Correspondence

1 Executive Summary

This Annual Review has been prepared on behalf of Hodgson Quarries and Plant Pty Ltd (the Operator). The Roberts Rd Maroota Sand Quarry, located on Roberts Road near Old Northern Road, Maroota, NSW has been extracting sand and gravels in accordance with Development Approval conditions 267-11-99, Environment Protection Licence 6535 and Water Access Licence 24163 since the 1990s.

On the 13th August, 2021 the project received notification that an application for modification (Mod 4) had been approved. The modification allows for the importation of VENM and ENM to create a landform that better integrates with the surrounds. To assist with this implementation, there was an increase in traffic numbers (from 100 daily to 140), an extension to the period of approval (from 2025 to 2030), and removal of a condition limiting the exposed and active area. This report audits the compliance of the site to the Mod 4 conditions from 1st January 2025 to 31st December 2025.

A draft consolidated consent available from the DPIE Major Projects portal numbers the conditions in Schedule 2 differently to that in Mod 2 and the Notification of Modification for Mod 4. This report therefore adopts the numbering convention given in the Notification of Modification and past consent versions, rather than the draft Consolidated Mod 4 Consent in that it aligns more closely with previously existing conditions. It is hoped that the errors in the draft will shortly be rectified.

All operational and environmental management criteria within the consent conditions have been met during the report period, 1st January to 31st December 2025.

All management plans were updated in 2023 but no approvals received to date.

2 Conditions Compliance

Under Condition 6 of the Conditions of Consent, a Conditions Compliance Report must be submitted to the Secretary prior to the commencement of extraction in areas that are not currently subject to extraction. Subsequent reports will be submitted annually for the first three years of extraction in areas not currently subject to extraction.

There have been no new areas opened up in the three years since the 2022 Annual Review and Conditions Compliance Report for the year ending December 2021. Therefore, no condition compliance report has been undertaken in this report period.

The Operator does not intend to open up new areas in 2026.

2.1 ACTIONS TO ADDRESS PREVIOUS NON-COMPLIANCES

2.1.1 Updating of Plans and Strategies

Schedule 2 condition 22 and 67 requires the site to review all Management Plans within 3 months of consent modification. Only the Surface Water Management Plan and Transport Management Plan had been reviewed and updated following consent Mod 4. Condition 58 requires the Rehabilitation Plan to be updated for changes to the final landform described in Mod 4. All management plans were updated in 2023 and are awaiting department approval.

2.2 ACTIONS REQUIRED FROM PREVIOUS REPORTS

2.2.1 Annual Review and Compliance Report 2024

The 2024 Annual Review and Conditions Compliance Report was submitted to DPE on 31st March 2025 through the Major Projects Portal. Acknowledgement was received from DPIE on 31st March 2025, and acceptance of the report received 31st July 2025.

No non-compliances were reported for the 2024 reporting period.

3 Introduction

3.1 PROJECT SITE

This Annual Review and Conditions Compliance Report has been prepared by VGT Environmental Compliance Solutions Pty Ltd (VGT) on behalf of Hodgson Quarries and Plant Pty Ltd (the Operator). The Roberts Rd Maroota Sand Quarry is located on Roberts Road near Old Northern Road, Maroota, NSW. Maroota is approximately 50 kilometres north-west of Sydney (see [Figure One](#)). The Operator extracts sand and gravels from the site according to Development Approval conditions 267-11-99.

3.2 BACKGROUND

The Maroota area is known for the production of sand from a paleochannel system and represents a valuable resource to the building industry. The sand is obtained from two main sources, the Maroota Sand which overlies the weathered profiles of the Hawkesbury Sandstone. Clay beds deposited by the meandering of the paleochannels are common throughout the Maroota Sand formation.

The Roberts Rd site has been operational since the 1990's and construction of a water supply dam commenced in or around the 1970's. Consent was granted for extraction and processing of sand, clay and pebble material in 2000 and the continued construction of the dam which is located on the northern boundary of the site. The client took over operations on the site in 2004.

This Annual Review and Conditions Compliance Report covers the period 1st January 2025 to 31st December 2025 and has been conducted against the Modification 4 approved on 13th August 2021.

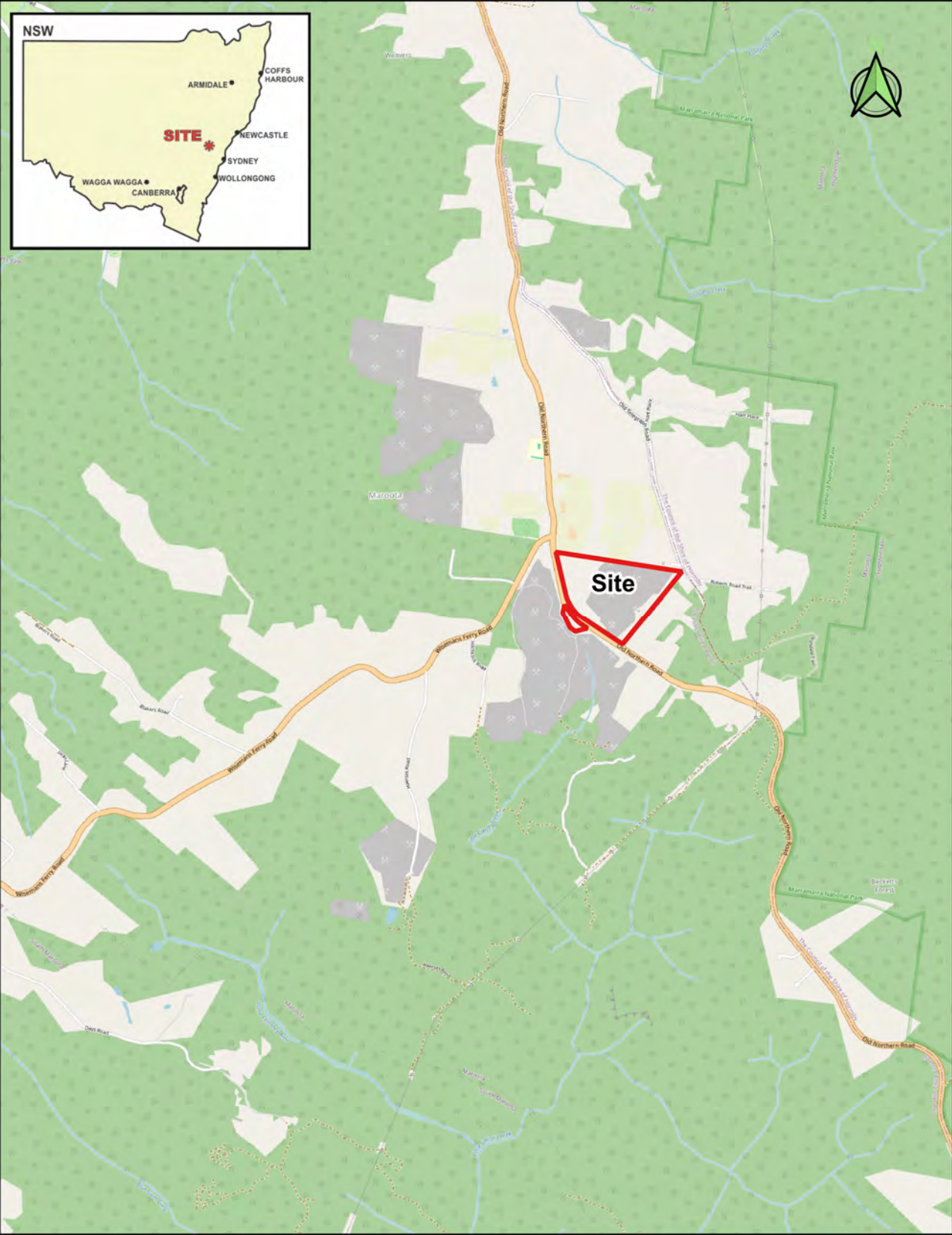
3.3 QUARRY CONTACTS

	Production Manager	Environmental Officer
	Martin Hodgson	Stuart Reed
	Hodgson Quarry and Plant Pty Ltd	Hodgson Quarry and Plant Pty Ltd
Address	PO Box 92	PO Box 92
	Ourimbah NSW 2258	Ourimbah NSW 2258
Mobile	0408 251 393	0418 277 871
Phone	(02) 4372 1649	(02) 4372 1649
Email	hodgsonquarries@gmail.com	hodgsonquarries@gmail.com

Plan of:	Annual Review & Compliance Report 2025-2026 for Roberts Road Maroota Sand Quarry - Site Location	Location:	Maroota Quarry, Roberts Road, Maroota, NSW	Source:	Google OpenStreetMap & nearmap - Image Date 09/12/2025 Zone MGA 56	Plan By:	SK/JD
Figure:	ONE	Council:	Hills Shire Council	Survey:	Not Applicable	Project Manager:	SK
Version/Date:	V0 27/01/2026	Tenure:	Not Applicable	Projection:	GDA2020/MGA Zone 56 EPSG:7856	Office:	Thornton
Our Ref:	12783_HMA_AR2025-2026_Q001_V0_F1	Client:	Hodgson Quarries & Plant Pty Ltd	Contour Interval:	Not Applicable		



This figure may be based on third party data which has not been verified by vgt and may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and vgt does not warrant its accuracy.



0 0.5 1 1.5 km



0 250 500 750 m

Legend

Property Boundary

4 Approvals

This section details the approvals and licenses held for the site, as well as relevant legislative requirements that the owner, operator and site workers should be aware of. This chapter will be reviewed annually to ensure information remains up to date with legislative and policy changes.

4.1 DEPARTMENT OF PLANNING AND ENVIRONMENT

Development approval (DA267-11-99), with conditions of consent was first issued by the then Department of Urban Affairs and Planning on the 31st of May 2000. The first modification to S98/00772 was issued on the 29th of November 2000 (Mod 1). In view of the imminent expiry of the consent in May 2015, a further Modification to Consent (Mod 3) was submitted to the DPE to extend the life of the quarry to permit continued operations whilst Mod 2 was under consideration by the DPE. This was approved on the 18th of August 2015 with an expiry of the 31st of May 2016.

A Modification to Consent (Mod 2) to both regularise the existing extraction operation and to extend the life of the approved extraction was submitted to the Department of Planning and Environment (DPE) in May 2015. The DPE made requests for further information and an amended Modification to Consent document addressing those issued was submitted in September 2015 and approved on 18th March 2016.

A Modification to Consent (Mod 4) was submitted in November 2019. Mod 4 was granted 13th August 2021, see *Appendix A*.

There were no changes to the consent requirements this report period.

4.1.1 Report Requirements

This Review is required under condition 66 (Annual Review) of the consolidated consent.

Table 1. Review Requirements

Consent Condition No	Condition Text	Where addressed in this report
66	By the end of March each year (or as otherwise agreed by the Secretary), the Applicant shall review the environmental performance of the development for the previous calendar year to the satisfaction of the Secretary. This review must:	Submitted March 2025
66 (a)	(a) describe the development (including any rehabilitation) that was carried out in the past calendar year, and the development that is proposed to be carried out over the current calendar year;	Sections 5 , Section 6.10
66 (b)	(b) include a comprehensive review of the monitoring results and complaints records of the development over the past year, which includes a comparison of these results against the: • relevant statutory requirements, limits or performance measures/criteria; • monitoring results of previous years; and • relevant predictions in the EIS, Modification 1 and Modification 2;	Section 6
66 (c)	(c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;	Section 2 ,
66 (d)	(d) identify any trends in the monitoring data over the life of the development;	Section 6
66 (e)	(e) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and	Section 6

Consent Condition No	Condition Text	Where addressed in this report
66 (f)	(f) describe what measures will be implemented over the next year to improve the environmental performance of the development.	Section 6

4.2 ENVIRONMENTAL PROTECTION AUTHORITY (EPA)

Environmental Protection License 6535 (see *Appendix B*) has been issued under the *Protection of the Environmental Operations Act* for Crushing, Grinding or Separating Works and Dredging Works. It is renewed annually on the 12th of March and requires monitoring for noise impacts (see Section [6.8](#) for results). The EPL was amended on 16th June 2023 to include waste disposal (application to land) as a scheduled activity (importation of ENM and VENM described in Section [5.3](#)) and new noise monitoring locations.

4.3 WATER NSW, NSW DEPARTMENT OF PLANNING & ENVIRONMENT - WATER (DPE-W) AND NATIONAL RESOURCES ACCESS REGULATOR (NRAR)

The site holds a number of licenses issued under the *Water Management Act 2000*, for the operation of groundwater bores and dams. Location of these bores and dams can be found on [Figure Three](#). A summary table of those relevant to the development consent and their current status can be found in [Table 4](#). Water licenses and their conditions have been included in *Appendix C*.

Table 2. Relevant Water Licences Summary

Identification	Licence when Registered	Water Access Licence Number (WAL)	Water Approval No'/ Reference Number	Purpose	Allocation	Expiry	Bore Status	Comments
PT84PB1	10BL159748 (converted to WAL)	WAL 24163	10WA114817 10AL114816	Extraction	45.0 ML per year	14/06/2025	Converted to WAL	Can extract at a rate of 3L/sec.
	10SL045324 (converted to WAL)	WAL 26163	10CA104888 10AL104887	Irrigation	264.0 ML per year	16/02/2026	Converted to WAL	2 pumps and 2 Bywash Dams. Allocation to be transferred
PT84MW1	10BL158808	NR	NR	Monitoring	-	perpetuity	In use for water sampling	Installed 20/10/1998. Located near nursery.
PT84MW5	10BL158808	NR	NR	Monitoring	-	perpetuity	Not in use	Collapsed. Replaced by MW8
PT84MW6	10BL605696	NR	NR	Monitoring		perpetuity	In use for water sampling	Installed January 2015. To replace PT84MW4
MW7	10BL605799	NR	NR	Monitoring		perpetuity	In use for water sampling	Installed December 2016
MW8	10BL605799	NR	NR	Monitoring		perpetuity	In use for water sampling	Installed December 2016
MW9	10BL605799	NR	NR	Monitoring		perpetuity	Mined out	Installed December 2016
MW10	10BL605798	NR	NR	Monitoring		perpetuity	In use for water sampling	Installed December 2016
MW11	10BL605797	NR	NR	Monitoring		perpetuity	In use for water sampling	Installed December 2016
MW12	10BL605799	NR	NR	Monitoring		perpetuity	In use for water sampling	Installed December 2016
MW13	10BL605799	NR	NR	Monitoring		perpetuity	Mined out	Installed December 2016

NR = Not required: used for monitoring only

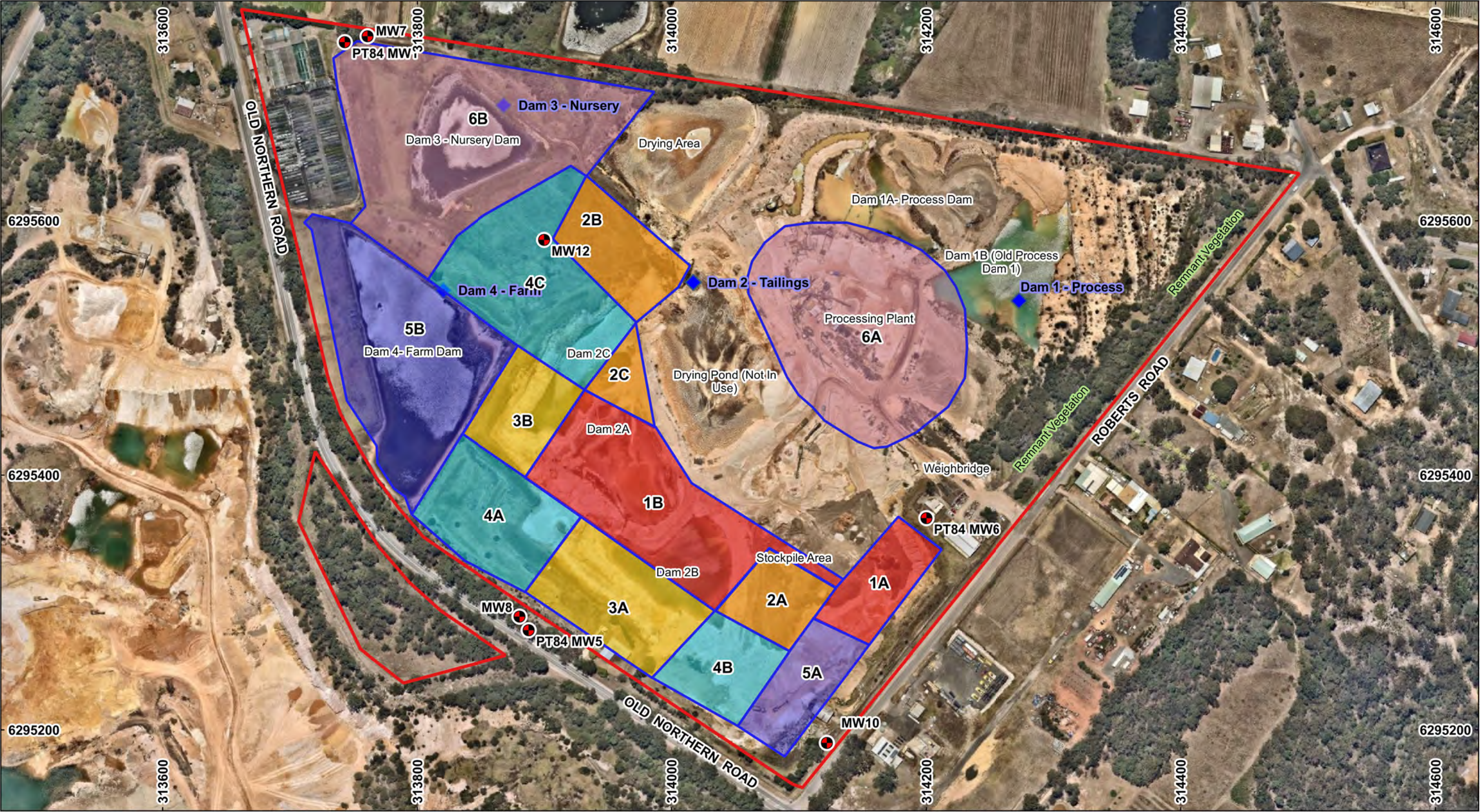
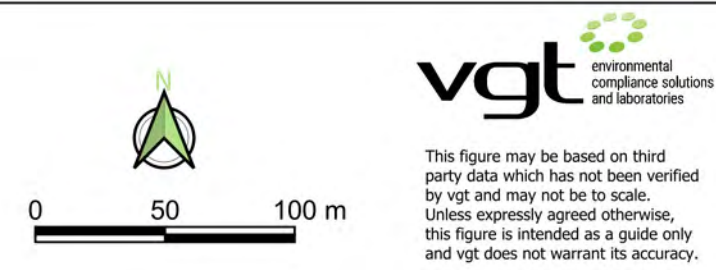
5 Operations Description

The site has approval under Mod 4 to extract sand and gravel at the rate of up to 70 incoming and 70 outgoing trucks per day and a maximum of 10 incoming and 10 outgoing truck movements per hour.

Extraction of the sand is contingent upon a water supply dam to wash the clay from the material won. The material is loaded onto a belt feeder which introduces the sand into a mixing tank. An electric pump at the water storage dam pumps water to the mixing tank via a pipeline. The sand slurry is drawn out of the mixing tank by a slurry pump and pumped to the processing plant. The processing plant washes and screens material, using water primarily from the existing water supply dam adjacent to the northern boundary (Process Dam 1). After washing and screening, material is stockpiled adjacent to the plant area prior to transportation off-site by truck. Trucks are loaded using a front-end-loader. Washing and screening forms a residual clay/silt slurry which is piped to designated drying areas in a previously extracted cell where it will be spread in thin layers to dry. Liberated water is drained to the water dam for re-use in the processing plant.

Site operations are illustrated on the following figures.

Plan of:	Annual Review & Compliance Report 2025-2026 for Roberts Road Maroota Sand Quarry - Sequence of Extraction	Location:	Maroota Quarry, Roberts Road, Maroota, NSW	Source:	nearmap - Image Date 09/12/2025 Zone MGA 56		
Figure:		Council:		Hills Shire Council	Survey:	Not Applicable	
Version/ Date:		V0 27/01/2026		Tenure:	Not Applicable	Projection:	GDA2020/MGA Zone 56 EPSG:7856
Our Ref:		12783_HMA_AR2025-2026_Q002_V0_F2		Client:	Hodgson Quarries & Plant Pty Ltd	Contour Interval:	Not Applicable



Legend

 Property Boundary	Years 1-2 (2015-2017)	Years 2-5 (2016-2021)	Years 5+ (2020+)	 Phase 6	Note: Phases and Years are indicative only, and are dependent on market demand and product mixing requirements.
 Water Sampling	 Phase 1	 Phase 3	 Phase 5		
 Monitoring Wells	 Phase 2	 Phase 4			

Plan of: Annual Review & Compliance Report 2025-2026 for Roberts Road Maroota Sand Quarry - Environmental Monitoring Locations

Figure: THREE

Version/Date: V0 27/01/2026

Our Ref: 12783_HMA_AR2025-2026_Q003_V0_F3

Location: Maroota Quarry, Roberts Road, Maroota, NSW

Council: Hills Shire Council

Tenure: Not Applicable

Client: Hodgson Quarries & Plant Pty Ltd

Source: nearmap - Image Date 09/12/2025 Zone MGA 56

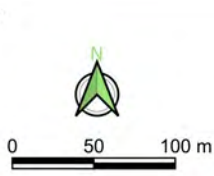
Survey: Not Applicable

Projection: GDA2020/MGA Zone 56 EPSG:7856

Contour Interval: Not Applicable

Plan By: SK/JD

Project Manager: SK



vgt environmental compliance solutions and laboratories

This figure may be based on third party data which has not been verified by vgt and may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and vgt does not warrant its accuracy.



- Legend**
- Property Boundary
 - Dam Areas
 - Water Sampling
 - Monitoring Well
 - Dust Gauge
 - Dust & HVAS
 - Weather Station
 - Attended Noise (EPL/SSD)
 - Road Noise Monitoring
 - Sprinkler

Plan of: Annual Review & Compliance Report 2025-2026 for Roberts Road Maroota Sand Quarry - Site Layout

Figure: FOUR

Version/Date: V0 25/03/2026

Our Ref: 12783_HMA_AR2025-2026_Q004_V0_F4

Location: Maroota Quarry, Roberts Road, Maroota, NSW

Council: Hills Shire Council

Tenure: Not Applicable

Client: Hodgson Quarries & Plant Pty Ltd

Source: nearmap - Image Date 09/12/2025 Zone MGA 56

Survey: Fyfe Quarry Contours 24/02/2022. NSW Spatial Services ELVISDEM Surrounding Contours Dated May 2017. Spot Heights via Ross Robinson Consulting Pty Ltd 2025.

Projection: GDA2020/MGA Zone 56 EPSG:7856

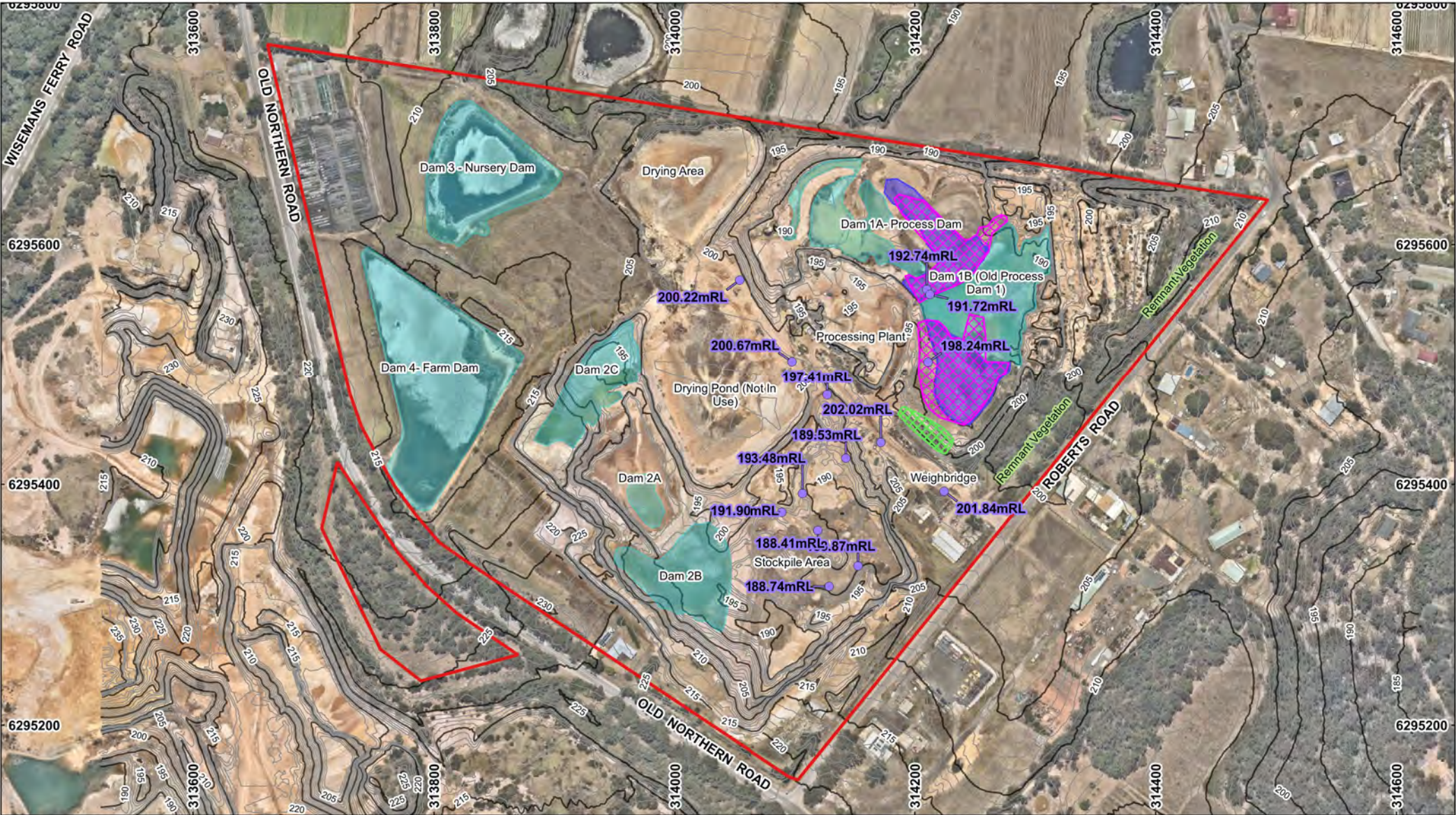
Contour Interval: 1m

Plan By: SK/JD

Project Manager: SK

vgt environmental compliance solutions and laboratories

This figure may be based on third party data which has not been verified by vgt and may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and vgt does not warrant its accuracy.



Legend

Property Boundary

Dam Areas

VENM/ENM Emplacement (2023)

VENM/ ENM Emplacement (2024)

VENM/ENM Emplacement (2025)

● 2025-2026 Survey Point

Topography 2017/2022

— 1m Contour

— 5m Contour

5.1 OPERATIONS 2025 CALENDAR YEAR

The site layout is illustrated in [Figure Four](#). The operation restricts activities to between the hours in [Table 4](#).

Table 3. Operational Hours

Days of the week	Activity	Hours
Monday to Friday	Construction	7.00am to 6.00pm
Monday to Friday	Extraction and processing of material	7.00am to 6.00pm (11 hrs)
Saturdays	Extraction and processing of material	7.00am to 1.00pm (6 hrs)
Monday to Friday	Vehicle loading	6.00am to 6.00pm (12 hrs)
Saturdays.	Vehicle loading	6.00am to 1.00pm (7 hrs)
Sundays & Public Holidays	No works permitted	

These hours were not exceeded during the report period, although it is site practice to open the gates at 5:30am to prevent trucks from parking on Roberts Rd. There were no extraordinary maintenance works or atypical operations outside of these hours during the report period.

Approximately 31,100 tonnes of material was sold during the report period, which was lower than 2024, and compliant with Schedule 2 Condition 9A (a) that the site will process or dispatch no more than 480,000 tonnes per calendar year.

Schedule 2 condition 17A states that:

17A. The Applicant must provide MEG with annual quarry production data, covering a full calendar year, by no later than 30 January for the following calendar year.

MEG requires that that extraction data be supplied on a financial year basis rather than calendar year and is now able to be submitted online via the Regulator Portal. It is hoped that this condition can be revised in consultation with MEG and DPE prior to the final consolidated consent conditions being issued for Mod 4.

5.2 TRANSPORT AND TRUCK MOVEMENTS

As per Condition 50A(e), an Operational Traffic Management Plan (TMP) was submitted March 2022 to DPIE with the request for TfNSW for consultation as well as submitted to Council. Consultation was received as well as DPE comments, and Revision 4 of the TMP was approved on 13/12/2022.

The TMP includes a Drivers Code of Conduct, which is to be individually signed by all transport and truck drivers and is reviewed annually.

5.2.1 Compliance Requirements

The TMP requires the following monitoring and records keeping.

Table 4. Traffic and Transport Monitoring Measures

Aspect	Frequency	Comments
Accurate records of quarry products transported to and from site	Calendar month and annually	Section 5.2.2
Accurate records of laden vehicles movements	Per hour, day, week, calendar month and year	Section 5.2.2

Aspect	Frequency	Comments
Monitor complaints with respect to Roberts Rd and other haul routes	Continuously	Section 5.4
A formal observation of compliance with Drivers Code of Conduct and Covering of Loads	Three monthly	Starting March 2023, records are available on request.

5.2.2 Monitoring Results and Compliance Trends

At no time during the report period did the number of laden trucks exceed the limit of 70 incoming or outgoing trucks per day. The weighbridge is not capable of logging movements per hour.

Section 94A contributions are paid monthly.

Table 5. Annual Production Last 5 Years

Cal Year	Production Tonnes	Limit Production per Calendar Year
2021	95,987	480000
2022	75,054	480000
2023	71,413	480000
2024	51,499	480000
2025	31,125	480000

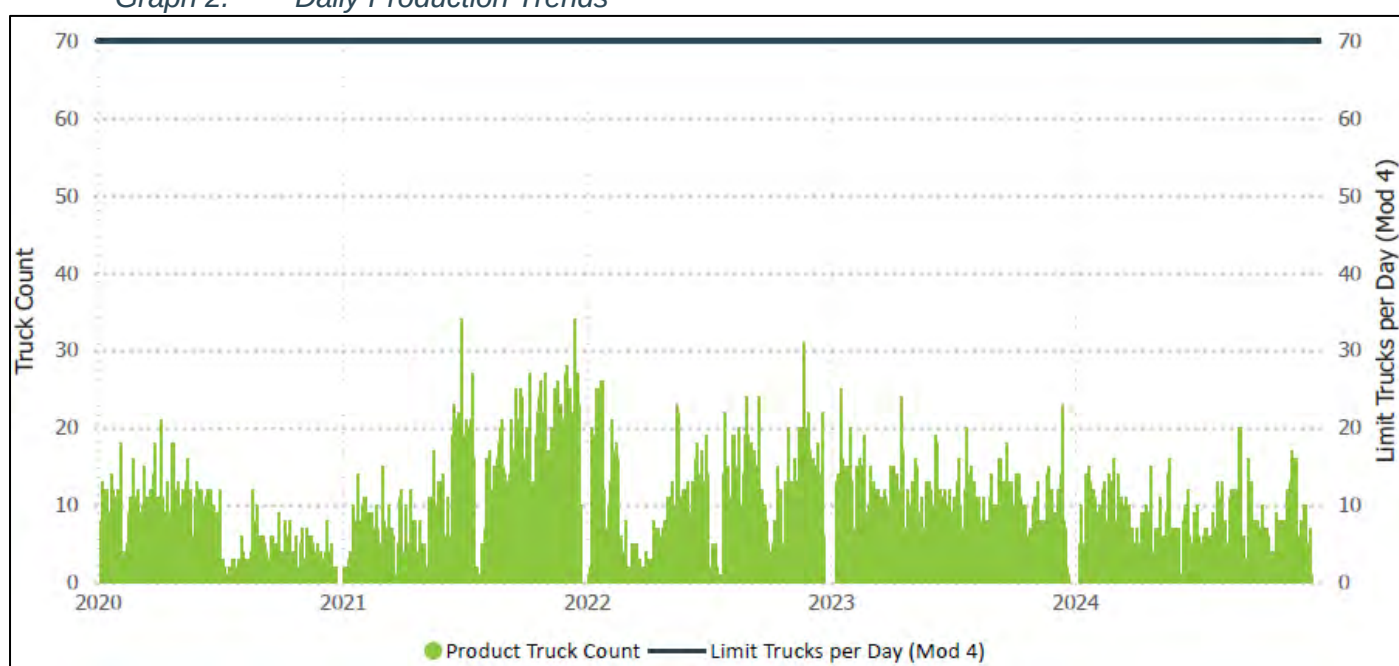
Graph 1. Annual Production Trends Last 5 Years



Table 6. Max Daily Production Trucks This Report Period

Date	Max Daily Product Trucks This Year	Limit Trucks per Day (Mod 4)	Production Tonnes
21/2/25	12	70	375.52
25/2/25	12	70	399.80
1/9/25	12	70	228.42
4/9/25	12	70	201.58
20/2/25	11	70	344.52
2/4/25	11	70	387.00
12/2/25	10	70	332.80

Graph 2. Daily Production Trends



5.3 MATERIAL IMPORTATION

5.3.1 Compliance Requirements

The Mod 4 consent condition number 9A states:

9A. The Applicant must not:

...

(b) receive more than 320,000 tonnes of VENM and ENM (in total) at the site in any calendar year;

(c) import more than 3 million tonnes of VENM and ENM to the site; and

(d) import VENM and ENM beyond 31 May 2030.

5.3.2 Monitoring Results and Compliance Trends

VENM and ENM Certificates have been obtained and are available on request. An example report is included in Appendix K.

Table 7. Annual VENM / ENM Importation Trends Last 5 Years

Cal Year	Importation Tonnes	Limit Import Tonnes per Calendar Year	Limit Import Tonnes Total
2022	6,632	320000	3000000
2023	22,234	320000	3000000
2024	117,434	320000	3000000
2025	93,980	320000	3000000
Total	240,280	320000	3000000

Graph 3. Annual Importation Trends Last 5 Years

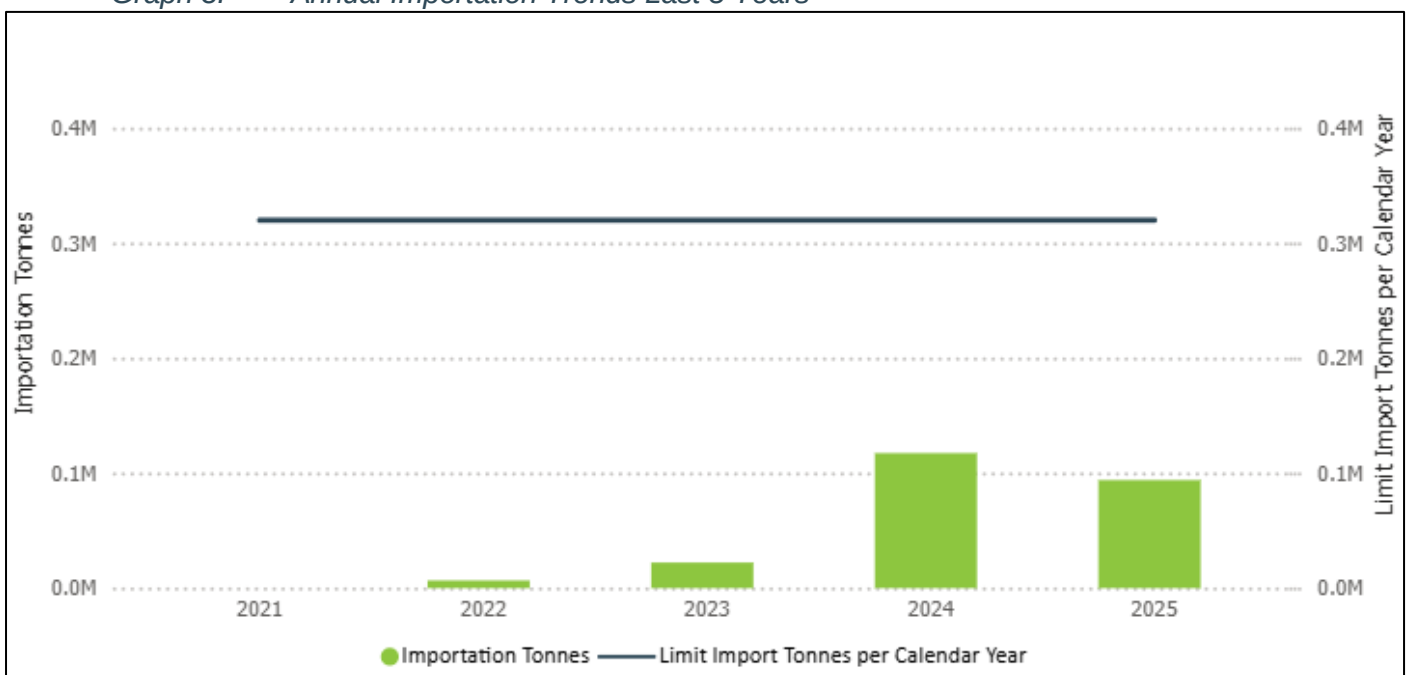
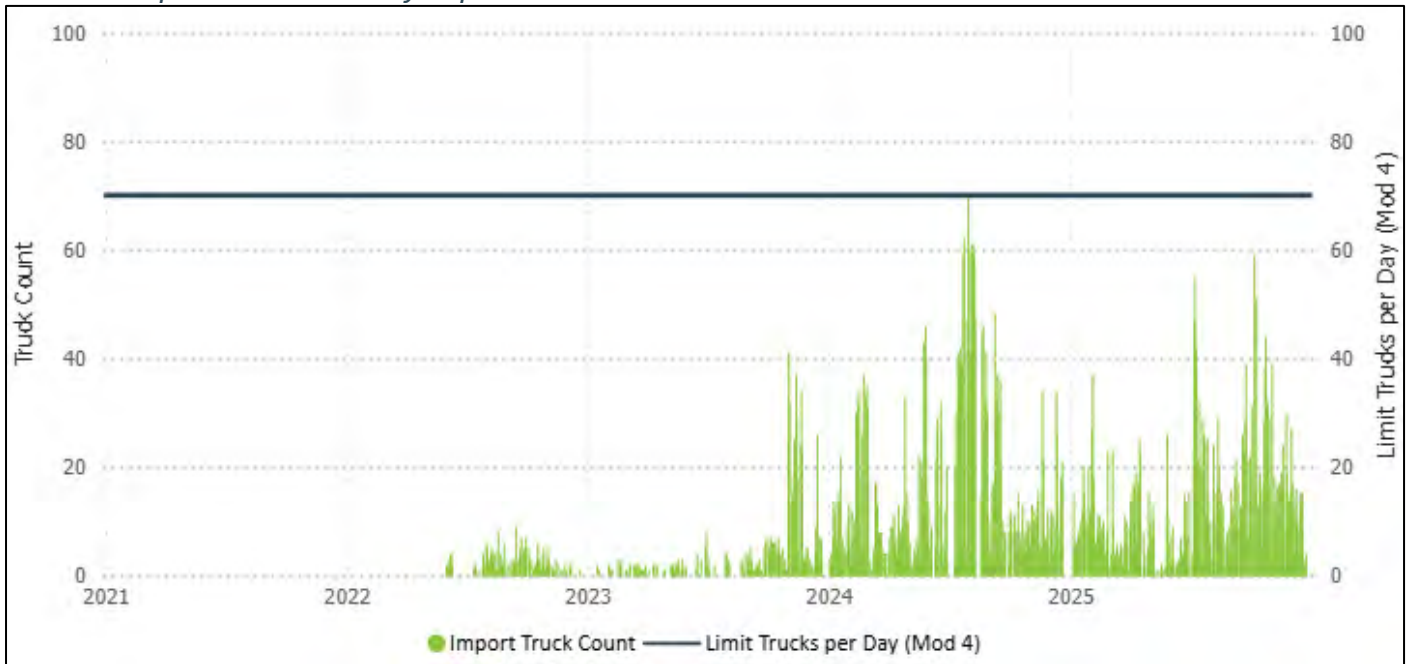


Table 8. Max Daily Importation Trucks This Report Period

Date	Max Daily Import Trucks This Year	Limit Trucks per Day (Mod 4)
7/10/25	59	70
9/7/25	55	70
10/10/25	51	70
8/7/25	47	70
24/10/25	44	70
11/7/25	42	70

Graph 4. Max Daily Importation Trends



Data on the VENM and ENM received at the site is collected and retained for every load, including details of the origin, date and quantity received. An example of VENM or ENM certificate covering the imported material is available on request.

5.4 COMPLAINTS AND COMMUNITY CONSULTATION

The client advertises a community complaints and enquiries phone number in the white pages, on their website (www.vgt.com.au/hodgsons), and in prominent signage on the front gate. All monitoring results, approved management plans and compliance reports, as well as relevant consent and approval documents are also available on the website. The complaints procedure is outlined in the Operational Environmental Management Plan. All complaints are recorded and actioned within 24 hours where possible. There have been no complaints received by the client during the reporting period. The complaints register and form is included in *Appendix D*.

Regular, informal consultation is undertaken verbally with neighbours.

5.5 PROPOSED OPERATIONS 2026 CALENDAR YEAR

Operations are proposed to remain similar in 2026. The active cells are proposed to be phases 3 through 5 as illustrated on *Figure Two*. No new disturbed areas are proposed to commence in 2026.

Emplacement of imported material is proposed to continue in the middle and southern end of Process Area Dam 1.

6 Environmental Management

6.1 WASTE MANAGEMENT

Rubbish is sorted on site into various streams including general rubbish, recyclable containers, used oils, etc and removed by licensed contractors.

During the IEA it was noted that oils and chemicals had been stored in un-bunded locations as well as waste materials such as used tyres present on the site. Negotiations with EPA resulted in the removal of recyclable waste and used tyres, and the purchase of pallet bunds. These works were completed by mid-December 2023. The client has advised that 6 tyres remain on site as safety barriers and there were no further tyres on the site that require disposal.

No other waste has been stored on site during the reporting period.

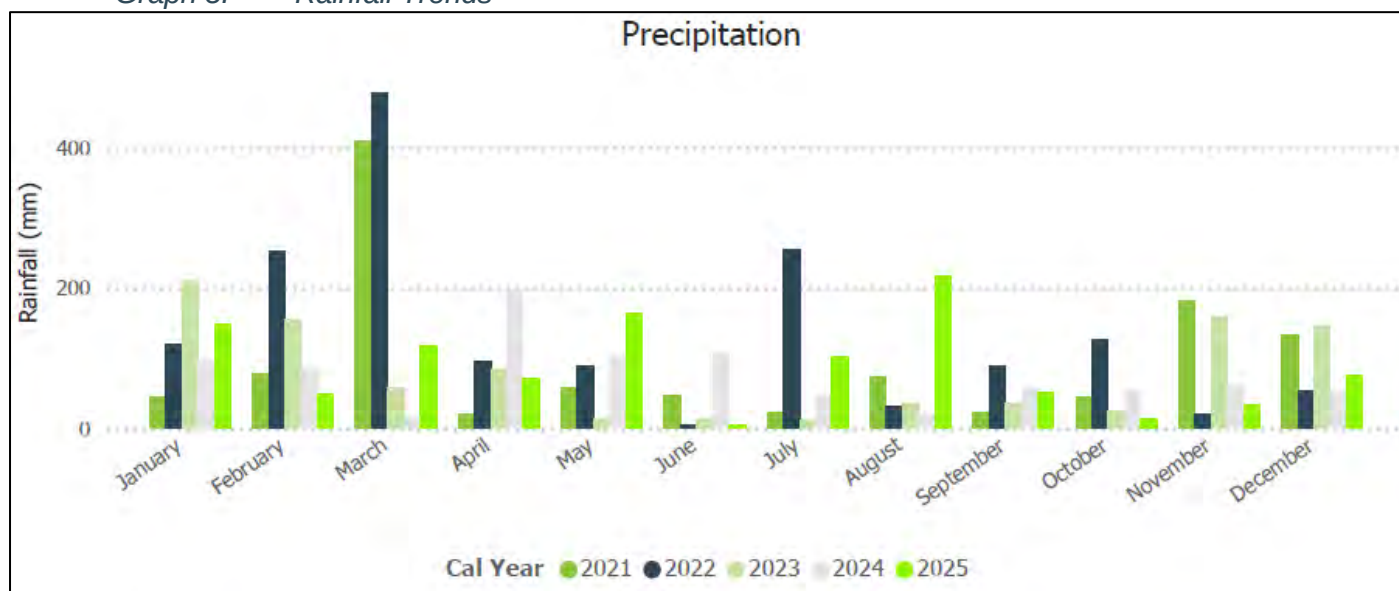
6.2 CLIMATE SUMMARY

Weather data is collected on site and downloaded monthly. This data is used to inform the water balance and assist in interpreting dust and groundwater impacts.

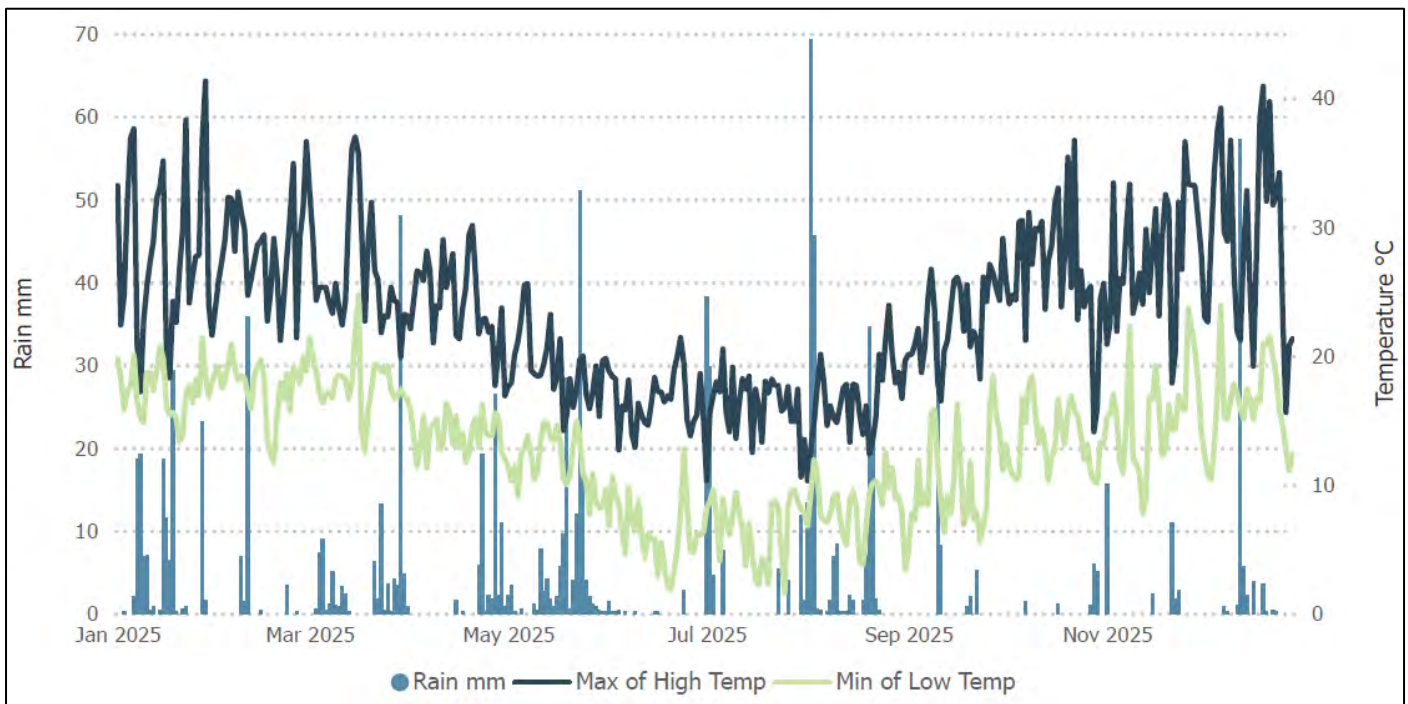
Table 9. Rainfall Summary

Precipitation mm												
Cal Year	January	February	March	April	May	June	July	August	September	October	November	December
2020	70.8	396.0	154.0	25.4	55.6	8.6	164.6	51.8	33.2	118.4	46.4	152.8
2021	45.6	77.2	408.8	19.2	57.0	92.8	44.0	146.8	42.8	87.6	565.4	264.4
2022	196.8	504.0	955.2	163.4	89.8	5.0	254.2	30.4	87.8	219.2	19.6	54.0
2023	210.0	155.4	114.0	172.4	47.0	40.8	27.0	36.4	35.8	73.2	320.4	152.6
2024	94.4	84.2	15.0	196.2	101.2	107.4	47.0	21.0	56.8	54.0	60.6	50.2
2025	147.8	48.0	117.8	71.4	165.0	5.8	103.0	216.4	51.4	14.6	33.6	75.2

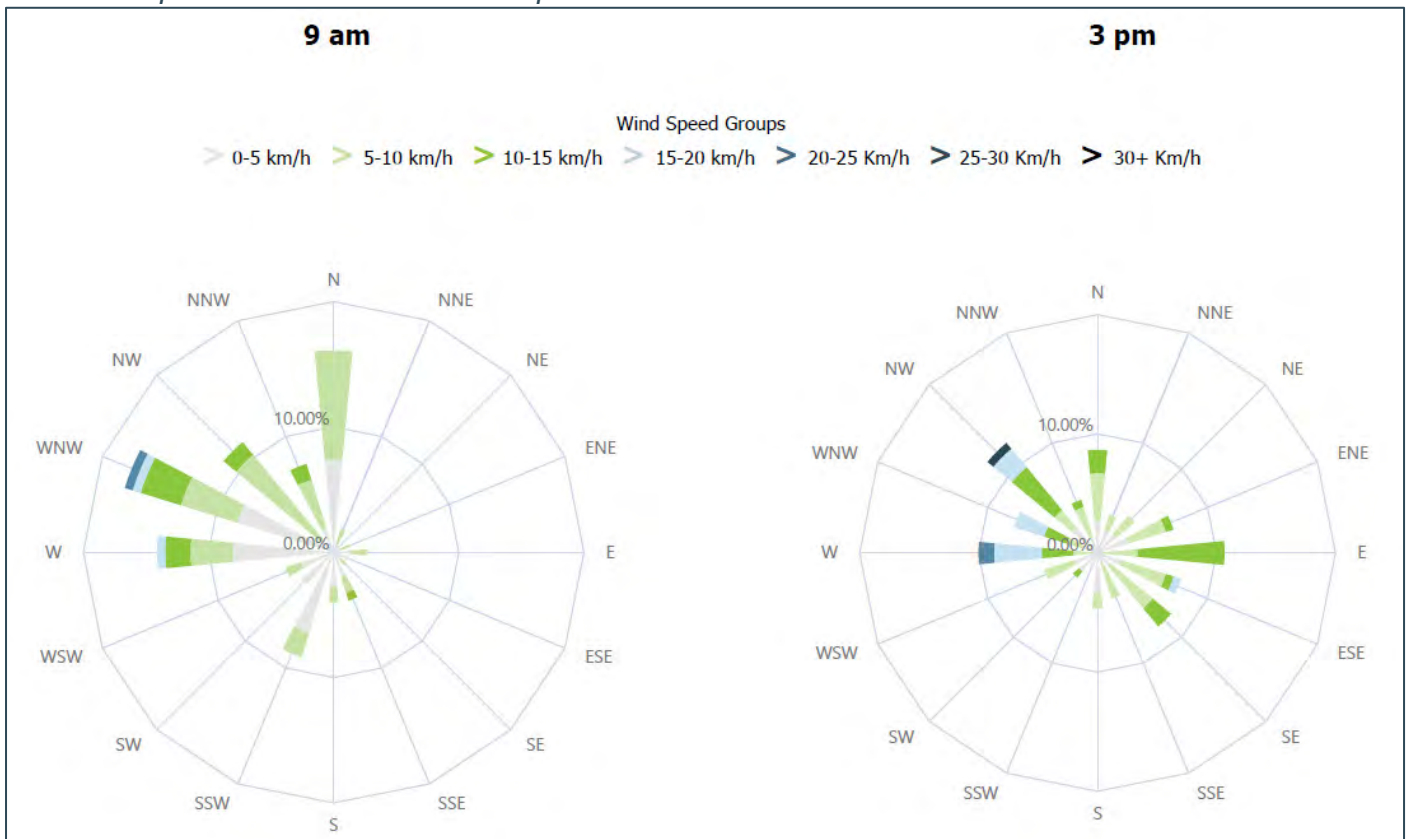
Graph 5. Rainfall Trends



Graph 6. Climate in Report Period



Graph 7. Wind Roses for Report Period



6.3 AIR QUALITY

6.3.1 Requirements and Predictions

The consent and Air Quality Management Plan specifies the following Air Quality Criteria:

Table 10. Air Quality Criteria

Parameter	Averaging Period	Consent Limit Mod 4	Prediction ^a Max at Residences	Prediction ^b Max at Residences after 18/08/2021 Mod 4
Total Suspended Particulates (TSP) µg/m³	Annual	90	57	43
PM₁₀ µg/m ³	24 hours	50	49	Not predicted
PM₁₀ µg/m ³	Annual	25	15	22
PM_{2.5} µg/m ³	24 hours	25	Not predicted	Not predicted
PM_{2.5} µg/m ³	Annual	8	Not predicted	14.0
Insoluble Solids g/m²/month	Annual	4	1.7	2.8

Note ^a: The Air Quality Impact Assessment prepared for the Environmental Assessment for Mod 2 (Nexus Environmental Planning Pty Ltd, September 2015) predicted these impacts at the boundary.

Note ^b: The Air Quality Impact Assessment prepared for Mod 4 SoEE (Jacobs Group Australia Pty Ltd, 2019) predicted these impacts at the residents.

The EPL specifies no limits on air quality.

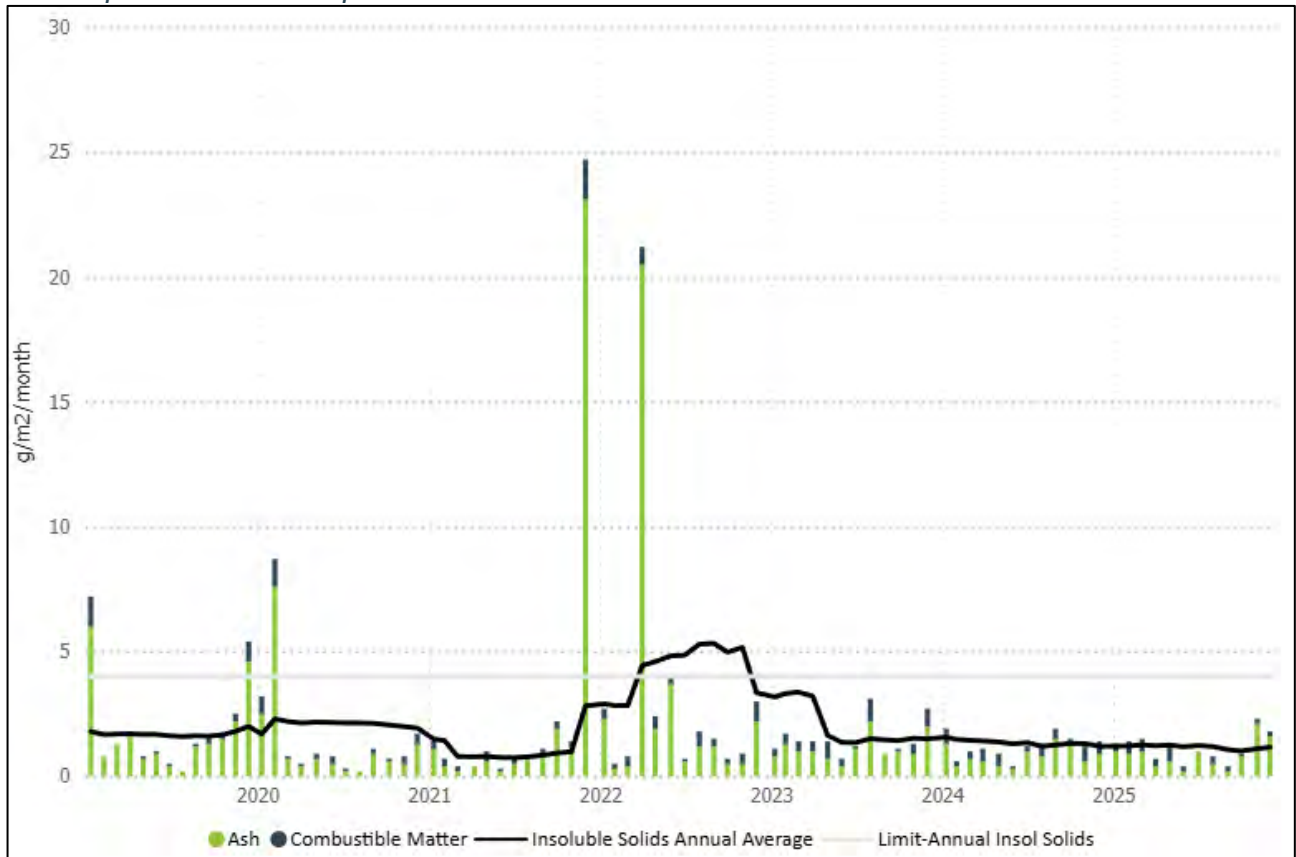
6.3.2 Monitoring Results Compliance and Trends

All air quality monitoring results are given in *Appendix E* and are summarised below.

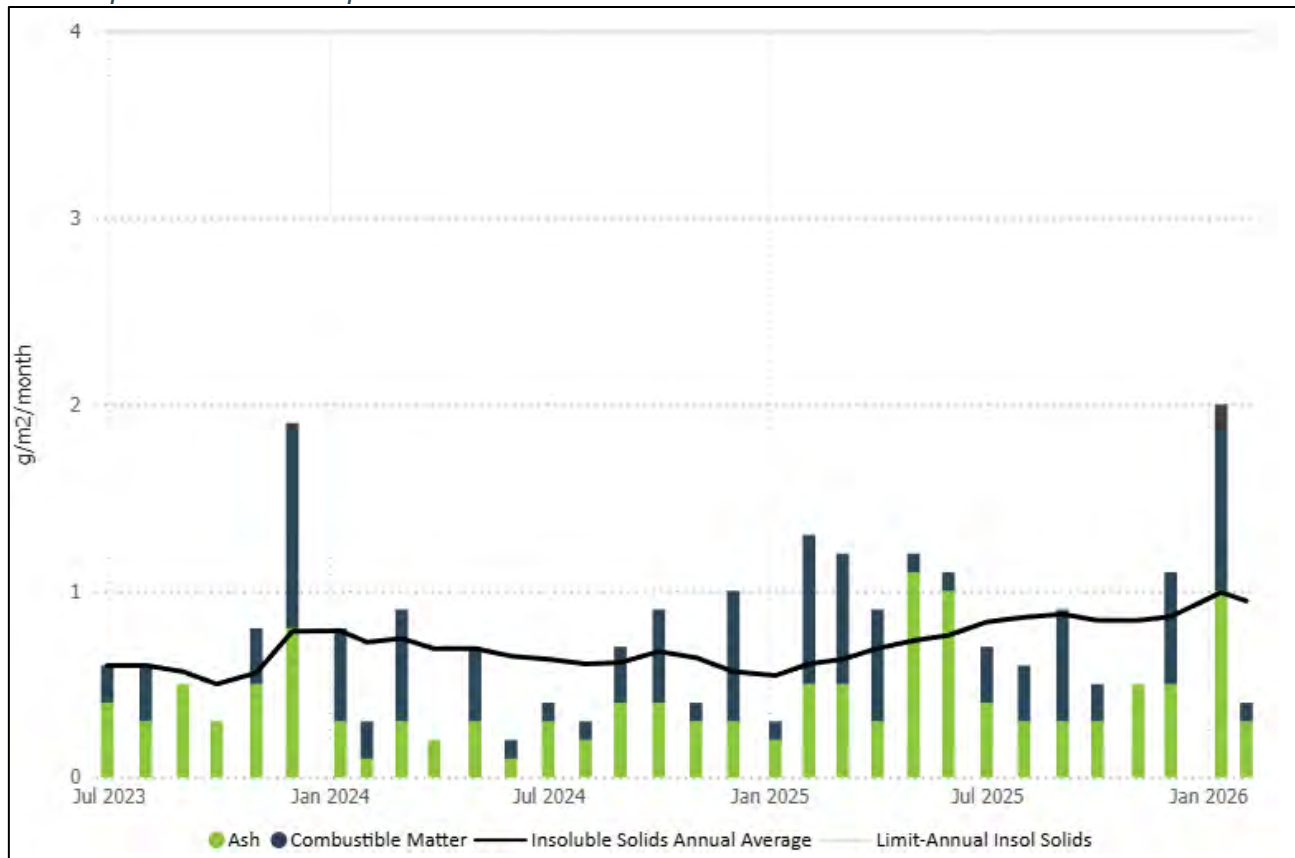
Table 11. Dust Deposition Gauge Results

Date Sampled	D1 Gate	D2a North East Corner	D3A Bundwall
06/01/2025	1.3	0.3	2.1
03/02/2025	1.4	1.3	1.4
03/03/2025	1.5	1.2	1.1
01/04/2025	0.7	0.9	0.6
01/05/2025	1.2	1.2	0.5
30/05/2025	0.4	1.1	0.4
01/07/2025	1	0.7	0.6
01/08/2025	0.8	0.6	0.5
02/09/2025	0.4	0.9	0.7
01/10/2025	0.9	0.5	2.9
04/11/2025	2.3	0.4	4.2
01/12/2025	1.8	1.1	5.4
Annual Average	1.1	0.9	1.7

Graph 8. Dust Deposition Trends: D1 Gate



Graph 9. Dust Deposition Trends: D2A NE Corner



Graph 10. Dust Deposition Trends: D3A Bundwall

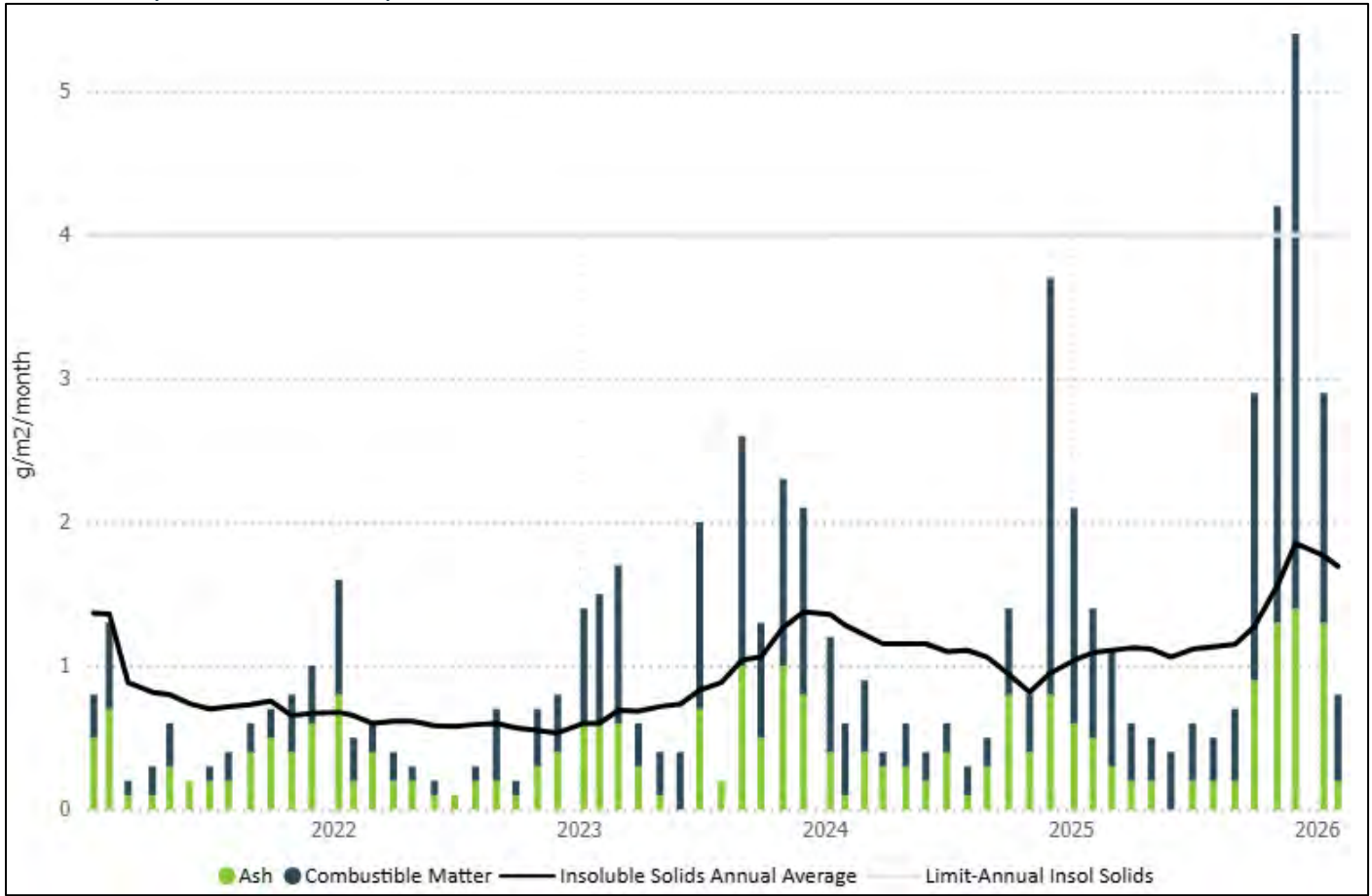


Table 12. Particulate Matter Annual Averages

Annual Averages	TSP $\mu\text{g}/\text{m}^3$	PM10 $\mu\text{g}/\text{m}^3$	PM2.5 $\mu\text{g}/\text{m}^3$
2025	21.9	10.4	7.0
Compliant with DA	Yes	Yes	Yes
Criteria	90	25	8
Prediction	57 (Mod 2) 43 (Mod 4)	15 (Mod 2) 22 (Mod 4)	N/A (Mod 2) 14 (Mod 4)
2024	22.6	11.4	7.1
2023	17.2	8.3	5.3
2022	11.0	5.0	2.1
2021	15.4	8.8	6.1
2020	21	11	7.8
2019	48	32	26

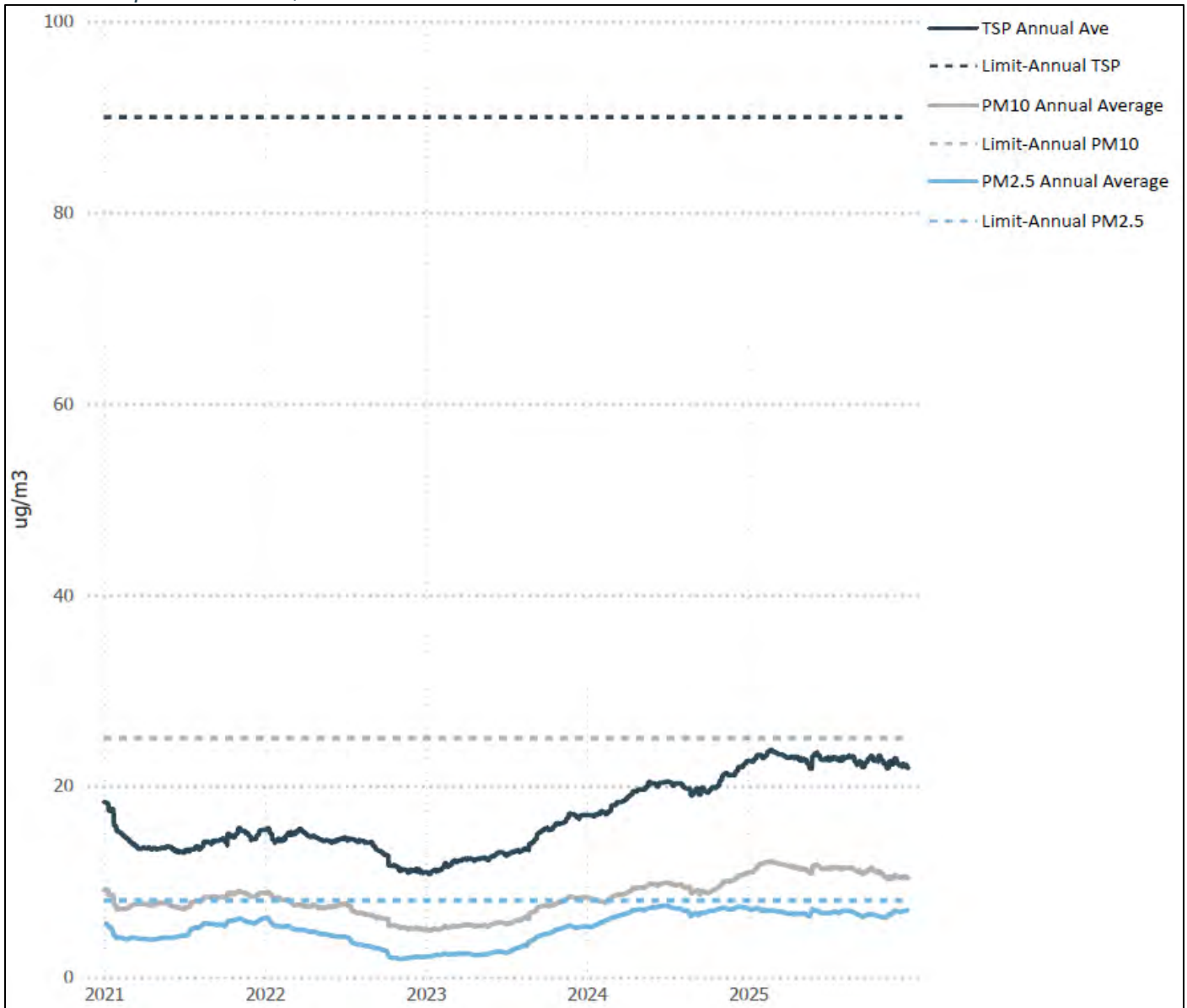
Table 13. Max 24 Hour Particulate Matter Averages

Max 24hr Averages	TSP $\mu\text{g}/\text{m}^3$	PM10 $\mu\text{g}/\text{m}^3$	PM2.5 $\mu\text{g}/\text{m}^3$
2025	21.9	10.4	7
Compliant with DA	Yes	Yes	Yes**
Criteria (Mod 4)	N/A	50	25
2024	55	27	25
2023	55	43	16 [36**]
2022	27	16	9

Table 14. 24Hr Exceedances

Date	PM10 $\mu\text{g}/\text{m}^3$	PM2.5 $\mu\text{g}/\text{m}^3$	Comments
27/05/2025	58	57	South Australia dust storm below through during machine run
17/11/2025	Nil exceedance	26	Backburning noted by operator
29/11/2025	Nil exceedance	27	Bushfire on Old Northern Road, Maroota 27/11/2025

Graph 11. TSP, PM₁₀ and PM_{2.5} Trends



6.3.3 Interpretation and Effectiveness of Controls

6.3.3.1 Interpretation of Monitoring Results

Total Suspended Particulates (TSP) and Annual Averages for PM_{2.5} and PM₁₀ for 2025 were compliant with DA criteria. Dust deposition (Insoluble Solids) were also compliant with DA criteria.

PM_{2.5} 24-hour limit was exceeded on three occasions.

PM₁₀ 24-hour limit was exceeded on one occasion.

All air quality monitoring results for the depositional dust gauges are relatively stable over the reporting period. The TSP, PM₁₀ and PM_{2.5} are indicating a stable trend over the last few years. This may be due to the lower rainfall over the last few years and the increasing area of unvegetated VENM/ENM emplacement in rehabilitation areas.

6.3.3.2 Particulate Matter 24-Hour Average Exceedances

High volume air sampler located near the office of the site had a Particulate Matter less than 2.5µm level of 57 µg/m³ and a Particulate Matter less than 10µm level of 58 µg/m³ for the 24 hours of 27/05/2025, which is above the 24 hour average criteria of 25 and 50 µg/m³ respectively. A dust storm originating from South Australia was noted for 27th May

2025. The DPE was notified of this event, although it is not an incident nor non-compliance as dust storms come under the Note C criteria of the Condition 30: *“Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fire incidents or any other activity agreed by the Secretary.”*

In the response from the DPE dated 04/07/2025 (see *Appendix L*), it was requested that actions taken to avoid or mitigate the air quality criteria exceedances be detailed. The site operator continues to implement the controls listed in Table 16. The operator has also acquired a second water cart unit during the reporting period that is superior to the previous model.

The high volume air samplers had a Particulate Matter less than 2.5µm level of 26 µg/m³ for the 24-hour average of 17th November 2025, an exceedance of the performance criteria condition of 25 µg/m³. The site operator noted bushfires were in the area during this sampling period.

The high volume air samplers had a Particulate Matter less than 2.5µm level of 27 µg/m³ for the 24-hour average of 29th November 2025, an exceedance of the performance criteria condition of 25 µg/m³. A bushfire warning was distributed for a bushfire on Old Northern Road, Maroota on 27th November 2025.

These exceedances in November 2025 were not reported to the DPE as the Air Quality Criteria excludes extraordinary events such as bushfires, prescribed burning, dust storms, fire incidents or any other activity agreed by the Secretary.

6.3.3.3 Potential Sources of Dust

Sources of dust from the site activities are:

- Dozers ripping sandstone,
- Loading and unloading of raw material using dump trucks,
- Loading the hopper,
- Screening,
- Loading processed material into trucks,
- Traffic on unsealed haul road, and
- Wind erosion from extraction and processing areas.

Background sources of dust include:

- Wind erosion from surrounding farmland and quarries,
- Mowing and ploughing activities on adjacent farmland,
- Earth-moving activities on nearby quarries,
- Traffic, particularly diesel-powered trucks on Old Northern Rd, and
- Bushfire, burning off, and domestic wood-fired heating.

6.3.3.4 Effectiveness of Air Quality Management Controls

Table 15. Effectiveness of Air Quality Management Controls

Control	Interpretation	Effective?
Increase use of watercarts in dry weather	Dust results do not increase with truck movements, nor on high wind days. Examination of wind direction during monitoring shows sources are off site.	Yes

Control	Interpretation	Effective?
Delaying non-essential earth-moving activities during periods of high wind	Dust results do not increase with truck movements, nor on high wind days. Examination of wind direction during monitoring shows sources are off site.	Yes
Reducing truck speeds	Dust results do not increase with truck movements	Yes
Damping down	Dust results do not increase with truck movements, nor on high wind days. Examination of wind direction during monitoring shows sources are off site.	Yes
Installation of a mobile sprinkler in 2019	Sprinklers are installed. Dust results do not increase on high wind days. Examination of wind direction during monitoring shows sources are off site.	Yes
Trucks covered when entering and leaving the site	Dust results do not increase with truck movements	Yes

6.3.4 Measures Proposed for Improvement

Air quality management controls have been effective for the 2025 calendar year and will be maintained during 2025. A sprinkler distributes water to disturbed areas that the water cart has difficulty accessing. Dust will continue to be monitored using high volume air samplers and dust deposition gauges.

Relocation of the monitors adjacent to the office was investigated previously and a lack of power and security makes the relocation not feasible.

A review of the Air Quality Management Plan was recommended by the Air Quality Monitoring Review and was undertaken in 2023 and is pending DPE approval. Recommendations are that TSP be no longer undertaken; however, monitoring continues until approval of the Management Plan.

6.3.4.1 Air Quality Monitoring 2023 Review

In accordance with Schedule 2 Condition 29A, an expert was commissioned to undertake a review of the air quality monitoring system at the site. The report was accepted by the DPE following revisions on 28/2/2023, with the recommendations and conclusions below:

“Based on the relevant criteria set out in AS3580.19 Methods for sampling and analysis of ambient air, Method 19: Ambient air quality data validation and reporting, and upon review of the results from 1/09/2021 to 1/9/2022, the air quality monitoring at the Roberts Rd Maroota Sand Quarry is fit for purpose, as accurate as can be reasonably expected, and exceeds those of the site’s nearest neighbours.

The following recommendations are proposed to assist in improving the site’s air quality monitoring system:

- Ensure site conditions and observations for the monitoring period are included on the sample sheet for all air quality samples, along with name of the technician, date and time sampled, and compliance with the siting and instrument requirements of the relevant method.
 - To be checked by Environmental Manager after each sampling event, or monthly at a minimum.
- Ensure that the procedure for sampling is documented and that all sampling technicians are trained in it regularly.
 - Procedure for sampling to be included in updated AQMP (see next point for timing). Training records to be maintained by the site and updated as required by staff changes.

- Update the site Air Quality Management Plan (AQMP) to include the modification 4 requirements. The author recommends that, in consultation with the DPE, monitoring for TSP be discontinued as this is a less critical parameter, and instead replaced by a ratio calculation from PM10 based on monitoring data collected from the site over as long a period as possible, without including the extraordinary events of the 2019-2020 bushfires. The explanation for how this is to be calculated would be included in the updated AQMP.
 - o It is recommended that the AQMP be updated within 3 months + 4 weeks (in accordance with Schedule 2 condition 67) following submission of the Annual Report and Independent Environmental Audit whichever is later, to ensure all outcomes from those reviews are included.”

In accordance with these recommendations, procedures for all air quality samples have been documented (see previous Annual Review for examples) and has been undertaken as detailed in Section [2.2.2](#).

6.4 SURFACE WATER, SEDIMENT AND EROSION

The Water Management Plan (version July 2018) was submitted to the (then) DoI Water and DPE to comply with the conditions of consent (Mod 2) and was approved by DPE on 22nd August 2018. An update was undertaken in December 2020 and was submitted via the Major Projects Portal for consultation in February, April and August 2021 (DA267-11-99-PA-11) as documented in submitted response number DA267-11-99-PA-13. An email request to NRAR for comment was sent again on 12th October 2021 with a response received 26th October 2021 that the matter was being reviewed. NRAR and DPIE-Water responded on 2nd Nov 2021 via the Major Projects portal that they had no comment. The WMP was then submitted to DPE via the Major Projects Portal, where comments requesting changes were advised in April 2022. Revision F2 dated June 2022 was approved on the 28th June 2022.

The water depth monitoring shows that all surface water bodies are above the level of the groundwater in both Maroota Sands and Hawkesbury Sandstone aquifers.

There was no water discharged from the site during the report period.

The surface level was monitored in the Process Dam using an automated logger that was downloaded monthly. This logger has been removed due to the emplacement of VENM and ENM within the Process Dam. Rainfall is monitored using the onsite weather station, and evaporation is collected from the local BOM data.

6.4.1 Requirements and Predictions

6.4.1.1 Water Testing

There are no quality parameters for water testing within the consent conditions or the EPL. Requirements regarding surface water monitoring in the consent condition 42 (b) are given below:

[The Surface Water Management Plan includes] a program to monitor:

- o the effectiveness of the water management system;*
- o site discharge water quality; and*
- o surface water level and quality in the Process Water Dam, including the quantification of rainfall inflow, groundwater inflow and evaporation;*

6.4.1.2 WMP Monitoring and Maintenance

Table 16. Monitoring and Maintenance from the WMP 2022

Parameter	Source	Compliance	Comments
Topsoil stripping to be visually monitored to check moisture content of soil and depth of stripping.	WMP section 4.9.3	Yes	
Stockpiles to be visually assessed at time of forming to check they do not exceed three metres high.	WMP section 4.9.3	Yes	
Visual check of stability and operation of all banks, ponds, channels and spillways to be undertaken monthly. Effecting any necessary repairs.	WMP section 4.9.3	Yes	
Removal of spilled sand or other materials from hazard areas, including lands closer than five metres from areas of likely concentrated or high velocity flows, especially waterways and access roads.	WMP section 4.9.3	Yes	
Removal of trapped sediment whenever less than design capacity remains for the sediment basins.	WMP section 4.9.3	Yes	Sediment dams meet required storm event capacity

Parameter	Source	Compliance	Comments
Ensuring rehabilitated lands have effectively reduced the erosion hazard and initiate upgrading or repair as appropriate	WMP section 4.9.3	Yes	Not yet applicable
Visual inspection for evidence of tailgate discharge and/or sediment build-up at exit to site.	WMP section 4.9.3		
Constructing additional erosion and/or sediment control works as might become necessary to ensure the desired water control is achieved.	WMP section 4.9.3	Yes	Not yet applicable
Automatic data loggers to monitor the dam levels to assist in the water balance modelling.	WMP section 4.9.3	Yes	Loggers installed in all surface dams. Dam 1 logger removed due to dam rehabilitation during the report period.
Weather data is obtained from the on-site weather station and reported in the Annual Review. Data is also used to calculate the water balance.	WMP section 4.9.3	Yes	Section 6.2
The water balance will be reviewed annually using rainfall, evaporation data, water usage on the site and any other relevant inputs.	WMP section 4.9.3	Yes	Section 6.6
All on-site dams to be sampled and water quality tested on an annually basis to determine if there is a relationship to the groundwater and to ascertain the water quality. Parameters include but no limited to: pH, Conductivity, Total Dissolved Solids, Chloride, Sulphate, Calcium, Magnesium, Sodium, Potassium, Nitrate, Oil and Grease.	WMP section 4.9.3	Yes	Section 6.4.2
Water quality in Sediment Basin 1, as shown in the Final Landform, will be within EPL criteria prior to discharge (once a variation to permit discharge has been approved).	WMP section 4.9.3	Yes	Not yet applicable

6.4.2 Monitoring Results Compliance and Trends

6.4.2.1 Water Quality Results

Surface water quality was tested 4 times during 2025 with the aim of assessing the relationship between surface water and groundwater. The pH is naturally low in the groundwater, and since the surface water has such low buffering capacity, the water from the bore water used in the processing plant (PB1) has a high influence on the pH of the Process Dam and Dam 2A and 2B. Dams 3 and 4 show little similarity to the groundwater, with pH closer to neutral. Dams 3 and 4 are influenced by surface inflows. The Oil & Grease was reported as Not Visible on all occasions.

Dams 2A, 2B and 2C have replaced Dam 2 as it is not an active dam due to silt buildup.

Table 17. Surface Water Quality Results Dam 1 – Process

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
Dam 1 - Process	21/1/25	5.9	262	160	59	12	5.0	4.0	24	2.0
Dam 1 - Process	9/4/25	6.6	219	140	53	11	5.0	4.0	20	2.0
Dam 1 - Process	30/7/25	6.8	184	110	36	14	5.4	3.0	20	2.0
Dam 1 - Process	22/10/25	5.7	181	110	36	16	4.0	3.0	17	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
Dam 1 - Process	21/1/25	5.9	262	160	59	12	5.0	4.0	24	2.0
Dam 1 - Process	9/4/25	6.6	219	140	53	11	5.0	4.0	20	2.0
Dam 1 - Process	30/7/25	6.8	184	110	36	14	5.4	3.0	20	2.0
Dam 1 - Process	22/10/25	5.7	181	110	36	16	4.0	3.0	17	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
Dam 1 - Process	21/1/25	5.9	262	160	59	12	5.0	4.0	24	2.0
Dam 1 - Process	9/4/25	6.6	219	140	53	11	5.0	4.0	20	2.0
Dam 1 - Process	30/7/25	6.8	184	110	36	14	5.4	3.0	20	2.0
Dam 1 - Process	22/10/25	5.7	181	110	36	16	4.0	3.0	17	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
Dam 1 - Process	21/1/25	5.9	262	160	59	12	5.0	4.0	24	2.0
Dam 1 - Process	9/4/25	6.6	219	140	53	11	5.0	4.0	20	2.0
Dam 1 - Process	30/7/25	6.8	184	110	36	14	5.4	3.0	20	2.0
Dam 1 - Process	22/10/25	5.7	181	110	36	16	4.0	3.0	17	2.0

Table 18. Surface Water Quality Results Dam 2 – Tailings

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
Dam 2 - Tailings	21/1/25	4.4	248	150	56	8	3.0	3.0	26	2.0
Dam 2 - Tailings	9/4/25	4.3	209	130	51	7	4.0	4.0	18	2.0
Dam 2 - Tailings	30/7/25	4.0	264	160	66	3	1.0	5.7	31	1.0
Dam 2 - Tailings	22/10/25	4.6	205	130	44	7	3.0	4.0	18	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
Dam 2 - Tailings	21/1/25	4.4	248	150	56	8	3.0	3.0	26	2.0
Dam 2 - Tailings	9/4/25	4.3	209	130	51	7	4.0	4.0	18	2.0
Dam 2 - Tailings	30/7/25	4.0	264	160	66	3	1.0	5.7	31	1.0
Dam 2 - Tailings	22/10/25	4.6	205	130	44	7	3.0	4.0	18	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
Dam 2 - Tailings	21/1/25	4.4	248	150	56	8	3.0	3.0	26	2.0
Dam 2 - Tailings	9/4/25	4.3	209	130	51	7	4.0	4.0	18	2.0
Dam 2 - Tailings	30/7/25	4.0	264	160	66	3	1.0	5.7	31	1.0
Dam 2 - Tailings	22/10/25	4.6	205	130	44	7	3.0	4.0	18	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
Dam 2 - Tailings	21/1/25	4.4	248	150	56	8	3.0	3.0	26	2.0
Dam 2 - Tailings	9/4/25	4.3	209	130	51	7	4.0	4.0	18	2.0
Dam 2 - Tailings	30/7/25	4.0	264	160	66	3	1.0	5.7	31	1.0
Dam 2 - Tailings	22/10/25	4.6	205	130	44	7	3.0	4.0	18	2.0

Table 19. Surface Water Quality Results Dam 3 – Nursery

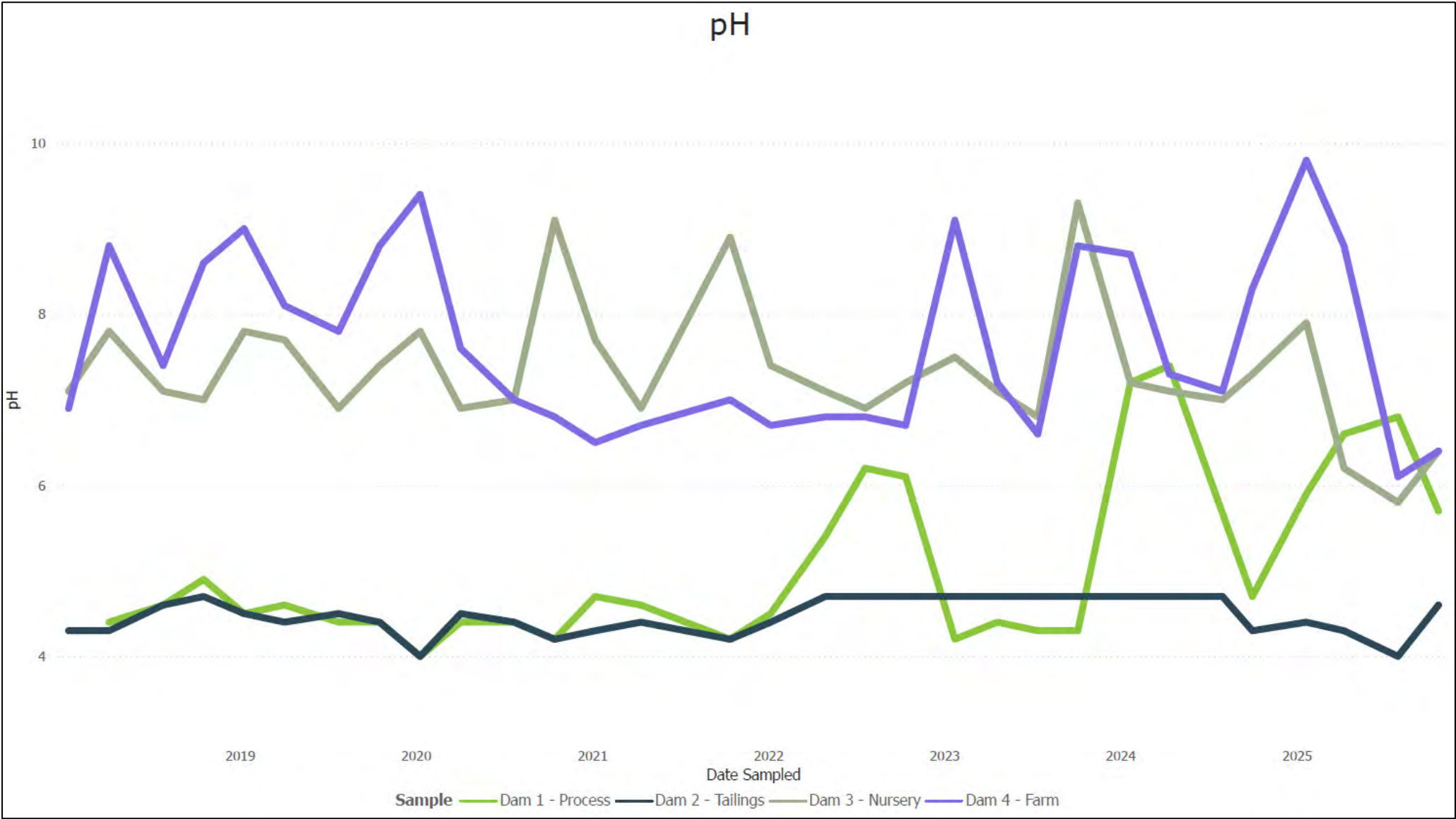
Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
Dam 3 - Nursery	21/1/25	7.9	234	150	46	7	5.4	4.0	20	5.1
Dam 3 - Nursery	9/4/25	6.2	216	130	50	6	5.8	5.3	19	5.0
Dam 3 - Nursery	30/7/25	5.8	173	110	37	6	3.0	4.0	18	3.0
Dam 3 - Nursery	22/10/25	6.4	167	100	36	7	4.0	4.0	15	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 3 - Nursery	21/1/25	7.9	234	150	46	7	5.4	4.0	20	5.1
Dam 3 - Nursery	9/4/25	6.2	216	130	50	6	5.8	5.3	19	5.0
Dam 3 - Nursery	30/7/25	5.8	173	110	37	6	3.0	4.0	18	3.0
Dam 3 - Nursery	22/10/25	6.4	167	100	36	7	4.0	4.0	15	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 3 - Nursery	21/1/25	7.9	234	150	46	7	5.4	4.0	20	5.1
Dam 3 - Nursery	9/4/25	6.2	216	130	50	6	5.8	5.3	19	5.0
Dam 3 - Nursery	30/7/25	5.8	173	110	37	6	3.0	4.0	18	3.0
Dam 3 - Nursery	22/10/25	6.4	167	100	36	7	4.0	4.0	15	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 3 - Nursery	21/1/25	7.9	234	150	46	7	5.4	4.0	20	5.1
Dam 3 - Nursery	9/4/25	6.2	216	130	50	6	5.8	5.3	19	5.0
Dam 3 - Nursery	30/7/25	5.8	173	110	37	6	3.0	4.0	18	3.0
Dam 3 - Nursery	22/10/25	6.4	167	100	36	7	4.0	4.0	15	3.0

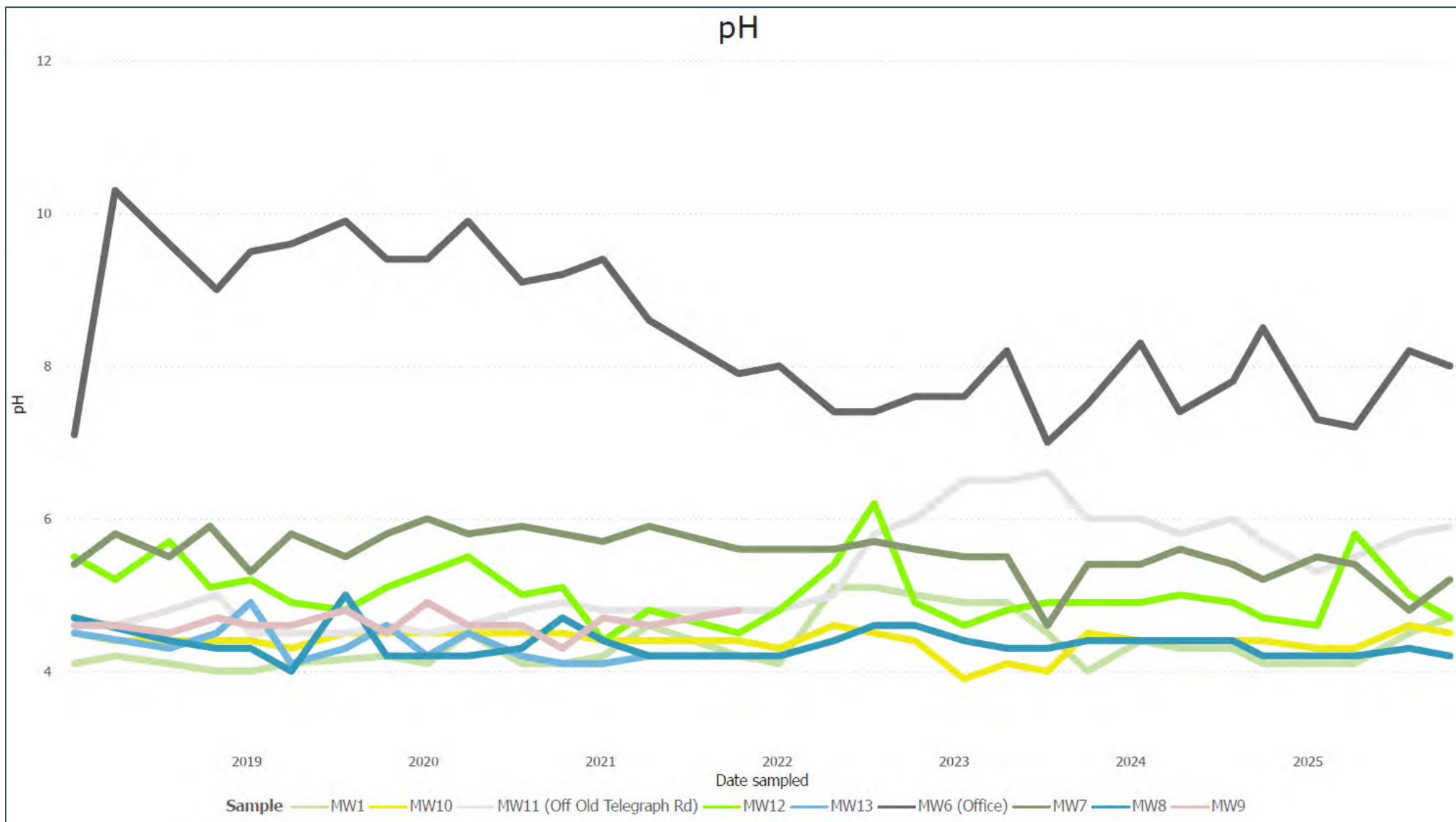
Table 20. Surface Water Quality Results Dam 4 - Farm

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
Dam 4 - Farm	21/1/25	9.8	148	92	23	10	3.0	2.0	11	4.0
Dam 4 - Farm	9/4/25	8.8	212	130	31	2	6.6	5.7	15	13.0
Dam 4 - Farm	30/7/25	6.1	123	77	24	3	3.0	3.0	13	4.0
Dam 4 - Farm	22/10/25	6.4	138	86	27	4	3.0	3.0	13	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 4 - Farm	21/1/25	9.8	148	92	23	10	3.0	2.0	11	4.0
Dam 4 - Farm	9/4/25	8.8	212	130	31	2	6.6	5.7	15	13.0
Dam 4 - Farm	30/7/25	6.1	123	77	24	3	3.0	3.0	13	4.0
Dam 4 - Farm	22/10/25	6.4	138	86	27	4	3.0	3.0	13	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 4 - Farm	21/1/25	9.8	148	92	23	10	3.0	2.0	11	4.0
Dam 4 - Farm	9/4/25	8.8	212	130	31	2	6.6	5.7	15	13.0
Dam 4 - Farm	30/7/25	6.1	123	77	24	3	3.0	3.0	13	4.0
Dam 4 - Farm	22/10/25	6.4	138	86	27	4	3.0	3.0	13	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 4 - Farm	21/1/25	9.8	148	92	23	10	3.0	2.0	11	4.0
Dam 4 - Farm	9/4/25	8.8	212	130	31	2	6.6	5.7	15	13.0
Dam 4 - Farm	30/7/25	6.1	123	77	24	3	3.0	3.0	13	4.0
Dam 4 - Farm	22/10/25	6.4	138	86	27	4	3.0	3.0	13	4.0

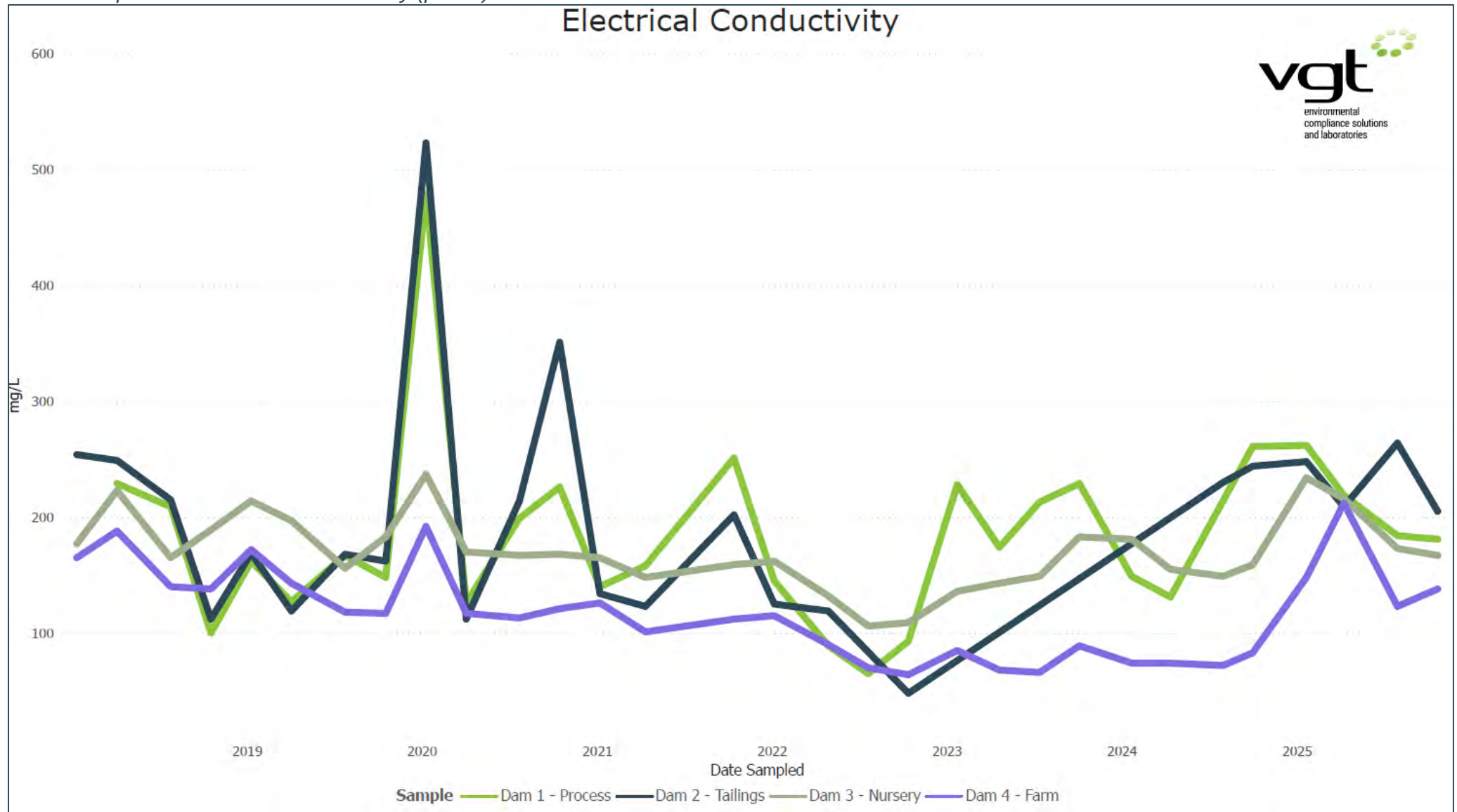
6.4.2.2 Water Quality Trends

Graph 12. pH Trends

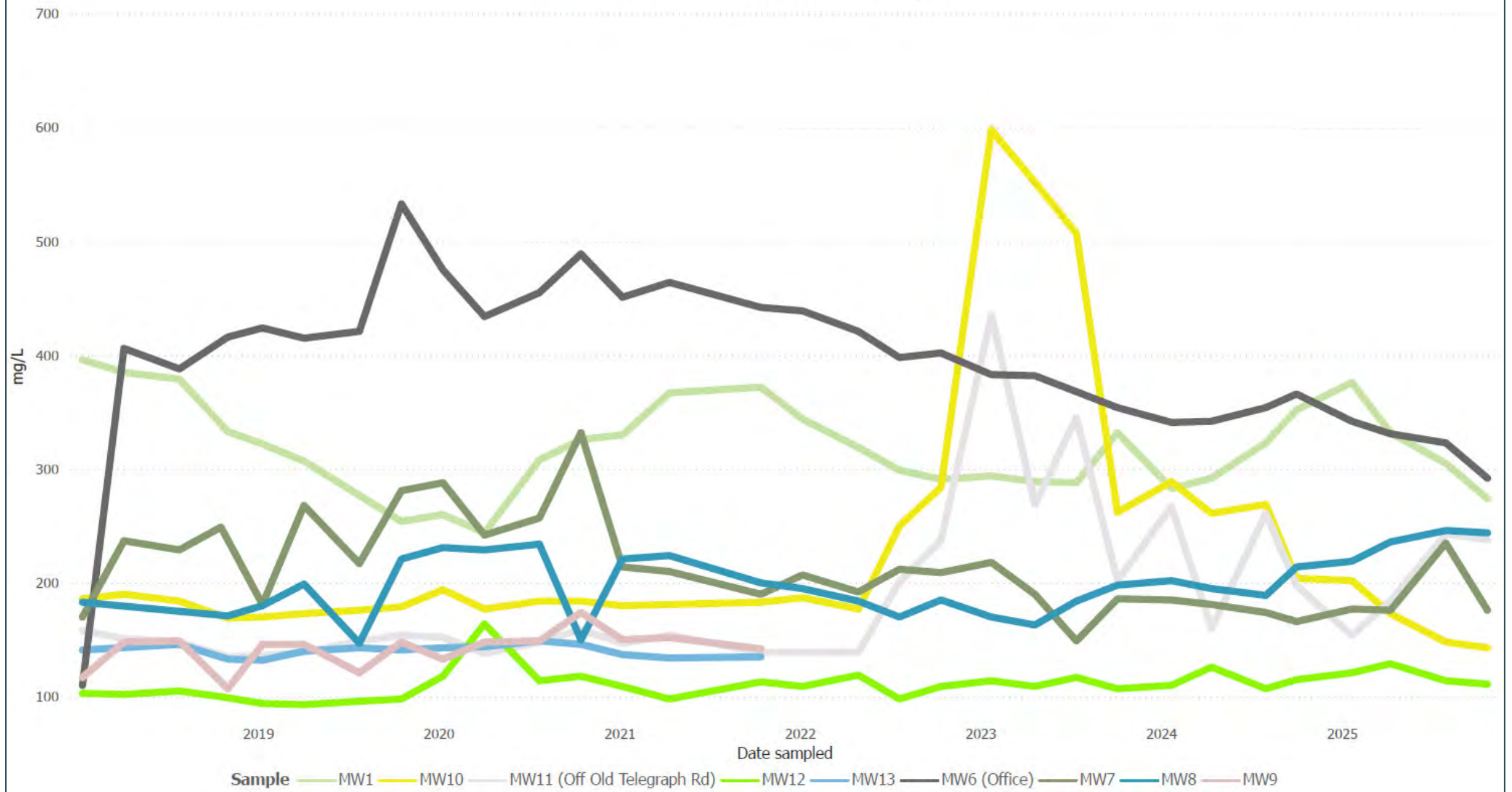




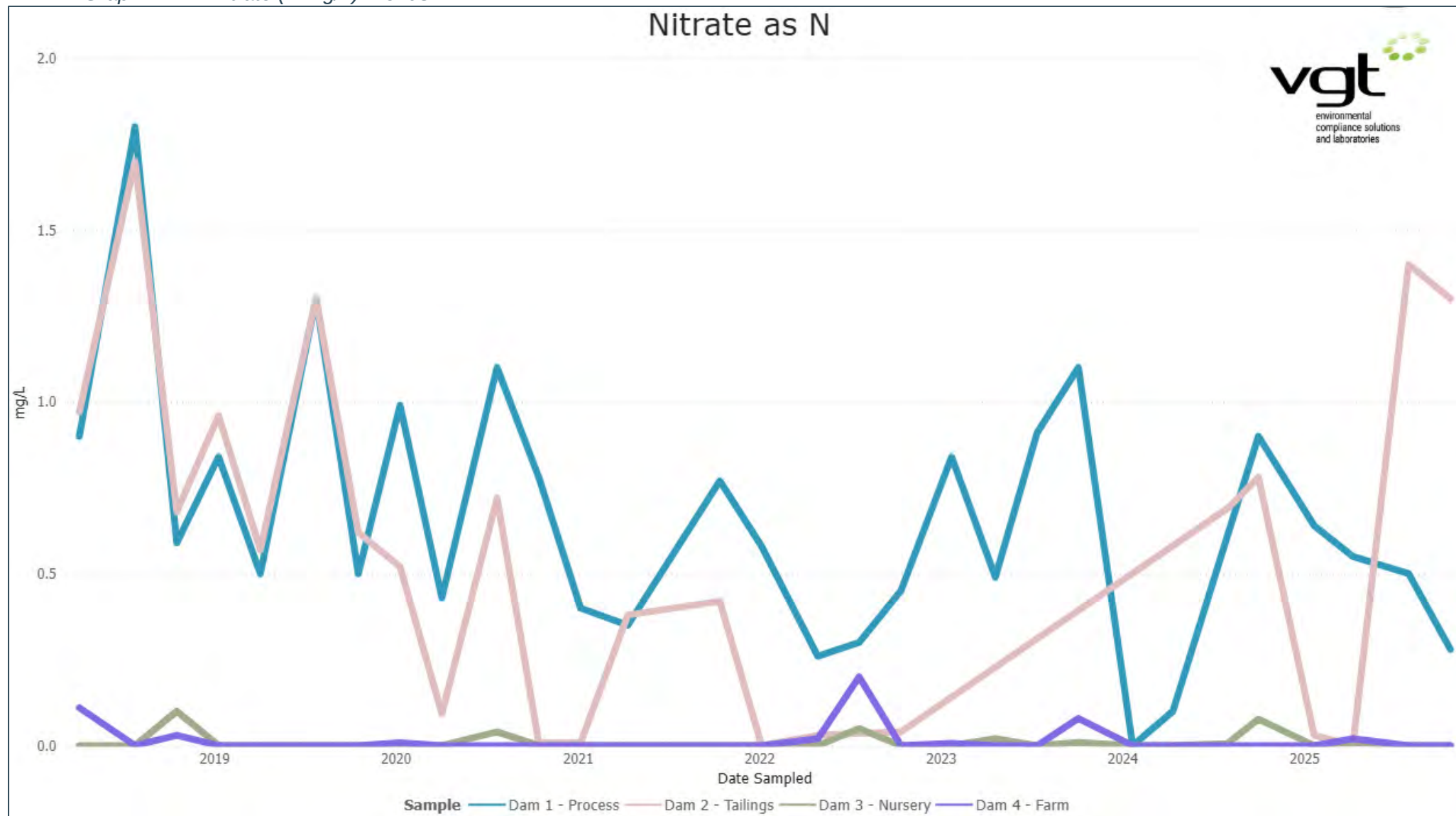
Graph 13. Electrical Conductivity ($\mu\text{S}/\text{cm}$) Trends



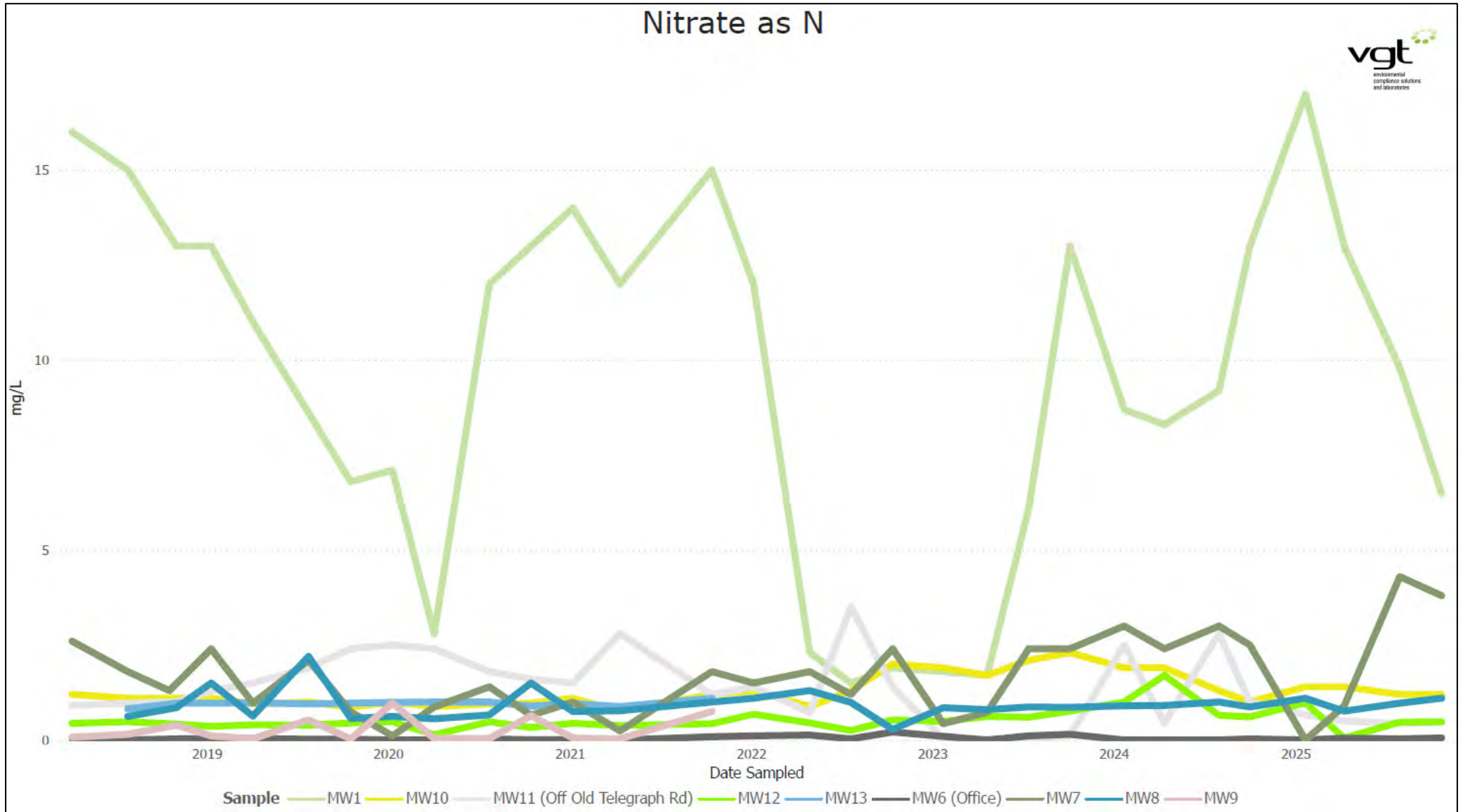
Electrical Conductivity



Graph 14. Nitrate (N mg/L) Trends



Nitrate as N



6.4.2.3 Water Depth

The extraction of sand on the site relies on an adequate supply of water for washing and screening of material. After processing, residual clay/silt is pumped to a clarifier and dosed. After sediment drops out of the water, the clean water is returned to the Process Dam. The silt/clay is then pumped to Dam 2B and/or Dam 3C.

6.4.3 Interpretation and Effectiveness of Controls

The primary consideration in assessing the effectiveness of the surface water controls is that the downstream environment is not adversely affected by discharged waters. In this regard the controls are effective as the site has more than sufficient capacity to contain surface water for the design storm event and no uncontrolled discharges have occurred.

The sediment and erosion controls are considered effective in terms of preventing sediment from leaving the site. Within the excavation there is evidence of erosion however all eroded soils and sediment are contained within the pit. Untouched areas are covered with pasture or tree stands and are not prone to erosion.

The water depth monitoring shows that all surface water bodies are above the level of the groundwater in both Maroota Sands and Hawkesbury Sandstone aquifers.

6.4.4 Measures Proposed for Improvement

Specific monitoring improvements to be investigated are as follows.

- Continue surface water level monitoring and report in accordance with the approved Surface Water Management Plan.
- Undertake water quality monitoring and reporting in accordance with the approved Surface Water Management Plan.
- Apply to the Secretary to reduce the need for annual water management plan updates.

6.5 GROUNDWATER

A Groundwater Study, Groundwater Management Plan (GWMP) and Groundwater Monitoring Program was submitted to the then DPE and DoI-W to comply with the conditions of consent, and approved by the DPE in August 2018. The groundwater monitoring bores on the site are summarised in [Table 23](#).

Table 21. Groundwater Monitoring Bores

Identification	Aquifer	Bore Status	Comments
(PT84)MW1	Maroota Sands (perched)	In use for water sampling	Installed 20/10/1998. Located near nursery.
(PT84)MW6	Maroota Sands, (upgradient)	In use for water sampling	Installed January 2015. To replace PT84MW4
MW7	Hawkesbury Sandstone	In use for water sampling	Installed December 2016
MW8	Maroota Sands (perched)	In use for water sampling	Installed December 2016. To replace MW5
MW9	Hawkesbury Sandstone	Intermediate - Mined out	Installed December 2016.
MW10	Maroota Sands	In use for water sampling	Installed December 2016
MW11	Maroota Sands downgradient	In use for water sampling	Installed December 2016
MW12	Hawkesbury Sandstone	In use for water sampling	Installed December 2016
MW13	Maroota Sands (perched)	Intermediate - Mined out	Installed December 2016.

6.5.1 Requirements and Predictions

Groundwater level monitoring is required under the consent conditions 42-44. It is not possible to measure depth within PT84PB1 due to the attached infrastructure; the pumping records are supplied in *Appendix G*. PT84PB2 is owned and operated by the landowner; the quarry operators have no use or access.

Table 22. Groundwater Level Monitoring

Parameter	Criteria	Units	Source
Groundwater Level	Monitored continuously	Metres AHD	Consent sched 2 cond 43
Depth of Extraction	Extraction does not take place below a level 2 metres above the wet weather high groundwater level of the regional aquifer, as measured and mapped on the site	Contours in metres AHD	Consent sched 2 cond 17

6.5.2 Monitoring Results Compliance and Trends

Groundwater level monitoring results from the continuous automatic data loggers are corrected for barometric pressure and calibrated to manual measurements undertaken each month. Groundwater levels are currently monitored in seven boreholes located on the site. MW1 logger was installed prior to 2015; the remaining loggers were installed in 2017. Following anomalous readings from the MW5 logger during 2017, the bore was investigated and discovered to have collapsed. The logger was relocated to a functioning bore and MW5 abandoned and replaced by nearby MW8.

Loggers in MW1 and MW12 were reinstated in November 2018 following repairs undertaken between May/June 2018 and October 2018. During this time manual readings continued. MW13 and MW9 has been decommissioned due to expansion of the quarry in November 2021.

On the 13th of February 2024 notification of the proposed destruction of the bores MW9 and MW13, due to advancing quarrying, was submitted to the NRAR. NRAR provided recommendations via an email dated 1st March 2024 in which it was requested that the bores be replaced to 'fill the monitoring gap in the monitoring program of the Maroota Tertiary Sands Groundwater Source from the southwest adjacent to Nursery Dam 4'. This is not considered necessary (see discussion below) and a response to NRAR is pending.

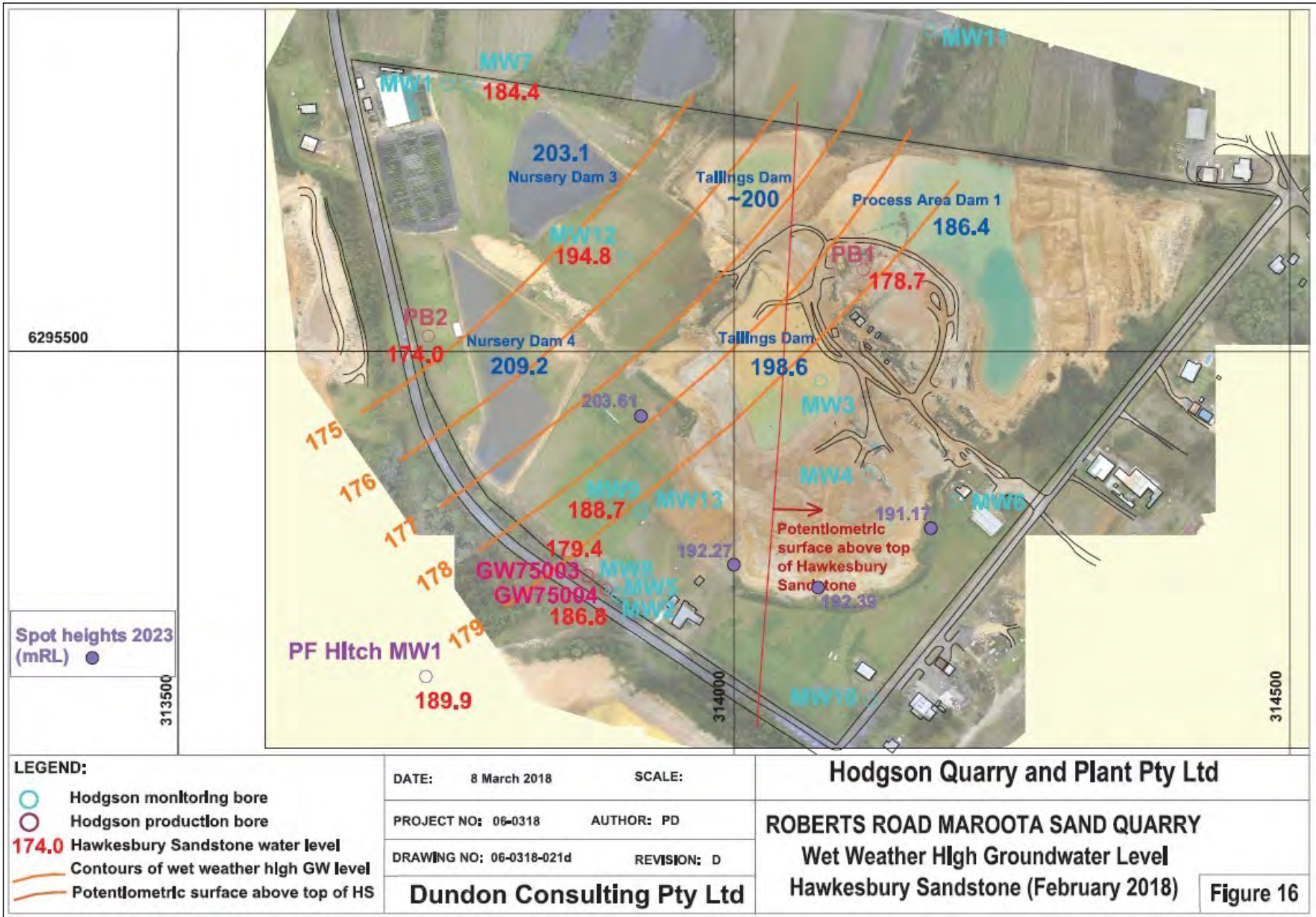
The location of the Maroota Sands regional groundwater table was described in the Groundwater Study undertaken by Dundon Consulting in October 2017 as following:

It is interpreted that the Maroota Sands regional water table is only present within the central part of the property, as the top of the Hawkesbury Sandstone rises above this water table level across the eastern and western parts of the property. Hawkesbury Sandstone is exposed on the eastern flank of the Main Process Dam. The lines marking the limit of saturated Maroota Sands are shown on **Figure 16**. To the west and east of this central deep zone, there is groundwater present in perched zones within the Maroota Sands, but the recent drilling program has shown that these zones are both limited in area and of limited saturated thickness.

The contours on **Figure 16** suggest a relatively gentle gradient to the north/north-northeast, down the likely axis of the palaeovalley.

Plan of:	Annual Review & Compliance Report 2025-2026 for Roberts Road Maroota Sand Quarry - Wet Weather High Groundwater Level Hawkesbury Sandstone (Feb 2018)	Location:	Maroota Quarry, Roberts Road, Maroota, NSW	Source:	Dundon Consulting Pty Ltd Figure 16 Dwg No. 06-0318-021d 08/03/2018	Plan By:	TO/SK/JD
Figure:	FIVE	Council:	Hills Shire Council	Survey:	Dundon Consulting Pty Ltd 08/03/2018	Project Manager:	SK
Version/Date:	V0 29/01/2026	Tenure:	Not Applicable	Projection:	MGA		
Our Ref:	12783_HMA_AR2025-2026_Q005_V0_F5	Client:	Hodgson Quarries & Plant Pty Ltd	Contour Interval:	1m		

This figure may be based on third party data which has not been verified by vgt and may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and vgt does not warrant its accuracy.



It should be noted that the Ground Water Study determined that MW9 and MW13 are located within the 'edge of the saturated Maroota Sands' and corresponds to and mirrors the relative level changes monitored in bore MW1, MW7, MW8 and MW12 (see Graph 16). Whereas bores MW6, MW10 and MW11 are monitoring the Maroota Sand Regional Water Table within the central section of the palaeochannel. The channel groundwater level trends higher in the south and lower in the north, consistent with the direction of groundwater flow. Any impacts to the groundwater levels will be detected by the existing bores and it is therefore not considered necessary to replace the bores.

There are no performance criteria for groundwater quality parameters within the consent conditions or the EPL. Quality is monitored quarterly to assist with predicting any interactions between surface and ground waters.

The groundwater quality results and trends are shown below.

Graph 15. Groundwater Depth Trends

All Groundwater Depths with Rainfall from 1/1/2019

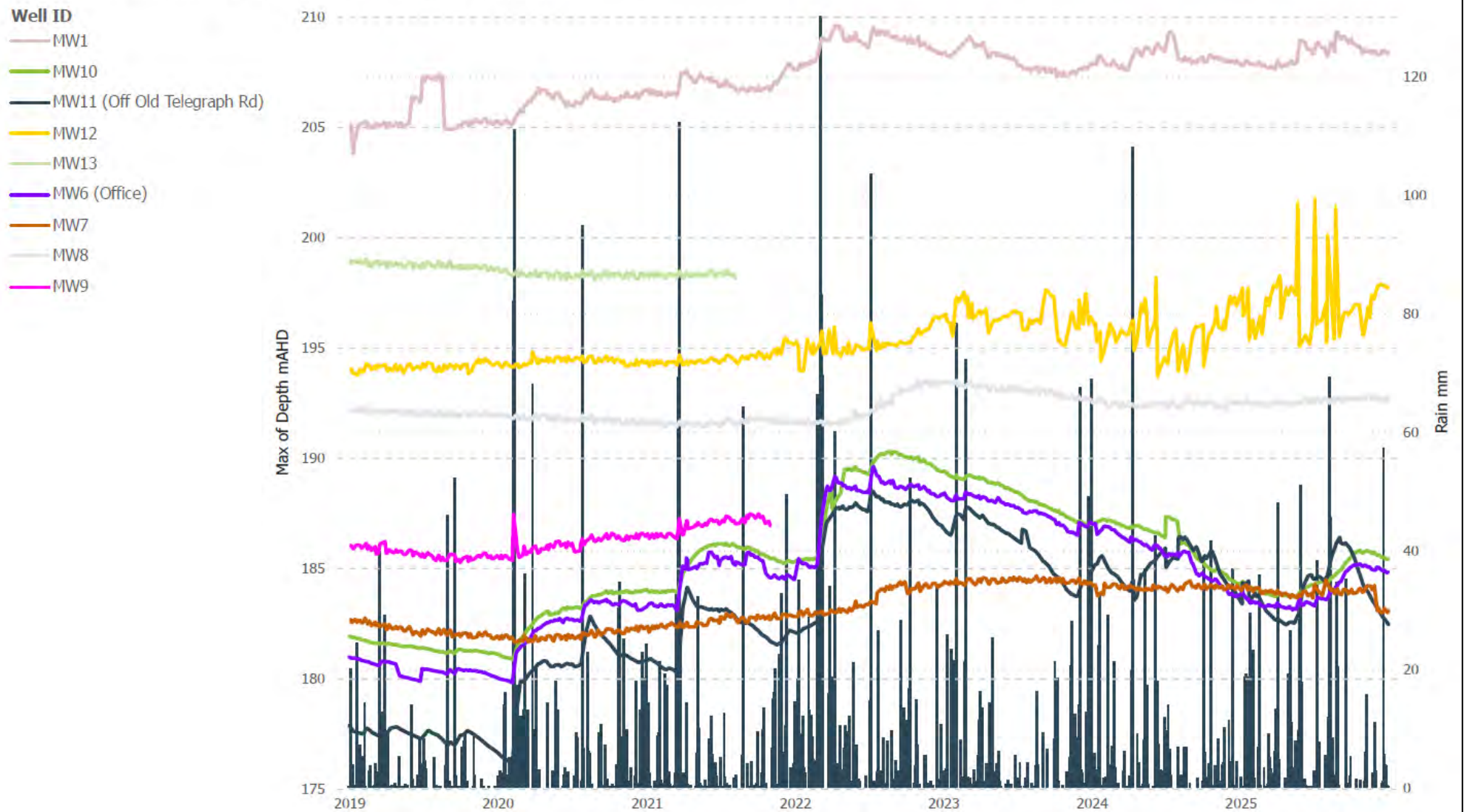


Table 23. Groundwater Quality Results – MW1

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
MW1	21/1/25	4.1	376	230	48	38	9.3	16.0	18	7.3
MW1	9/4/25	4.1	332	210	40	30	9.1	15.0	13	6.0
MW1	30/7/25	4.5	305	190	47	16	6.5	11.0	20	4.0
MW1	22/10/25	4.7	274	170	52	13	5.0	9.1	20	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
MW1	21/1/25	4.1	376	230	48	38	9.3	16.0	18	7.3
MW1	9/4/25	4.1	332	210	40	30	9.1	15.0	13	6.0
MW1	30/7/25	4.5	305	190	47	16	6.5	11.0	20	4.0
MW1	22/10/25	4.7	274	170	52	13	5.0	9.1	20	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
MW1	21/1/25	4.1	376	230	48	38	9.3	16.0	18	7.3
MW1	9/4/25	4.1	332	210	40	30	9.1	15.0	13	6.0
MW1	30/7/25	4.5	305	190	47	16	6.5	11.0	20	4.0
MW1	22/10/25	4.7	274	170	52	13	5.0	9.1	20	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
MW1	21/1/25	4.1	376	230	48	38	9.3	16.0	18	7.3
MW1	9/4/25	4.1	332	210	40	30	9.1	15.0	13	6.0
MW1	30/7/25	4.5	305	190	47	16	6.5	11.0	20	4.0
MW1	22/10/25	4.7	274	170	52	13	5.0	9.1	20	3.0

Table 24. Groundwater Quality Results – MW6

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
MW6 (Office)	21/1/25	7.3	342	210	81	0	4.0	3.0	54	2.0
MW6 (Office)	9/4/25	7.2	331	210	80	0	4.0	3.0	36	2.0
MW6 (Office)	30/7/25	8.2	323	200	78	0	4.0	3.0	46	2.0
MW6 (Office)	22/10/25	8.0	292	180	69	0	4.0	4.0	37	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)	21/1/25	7.3	342	210	81	0	4.0	3.0	54	2.0
MW6 (Office)	9/4/25	7.2	331	210	80	0	4.0	3.0	36	2.0
MW6 (Office)	30/7/25	8.2	323	200	78	0	4.0	3.0	46	2.0
MW6 (Office)	22/10/25	8.0	292	180	69	0	4.0	4.0	37	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)	21/1/25	7.3	342	210	81	0	4.0	3.0	54	2.0
MW6 (Office)	9/4/25	7.2	331	210	80	0	4.0	3.0	36	2.0
MW6 (Office)	30/7/25	8.2	323	200	78	0	4.0	3.0	46	2.0
MW6 (Office)	22/10/25	8.0	292	180	69	0	4.0	4.0	37	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)	21/1/25	7.3	342	210	81	0	4.0	3.0	54	2.0
MW6 (Office)	9/4/25	7.2	331	210	80	0	4.0	3.0	36	2.0
MW6 (Office)	30/7/25	8.2	323	200	78	0	4.0	3.0	46	2.0
MW6 (Office)	22/10/25	8.0	292	180	69	0	4.0	4.0	37	2.0

Table 25. Groundwater Quality Results – MW7

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
MW7	21/1/25	5.5	177	110	72	3	3.0	2.0	21	1.0
MW7	9/4/25	5.4	176	110	30	6	3.0	2.0	19	0.7
MW7	30/7/25	4.8	235	150	48	6	6.3	4.0	29	1.0
MW7	22/10/25	5.2	176	110	30	5	3.0	3.0	19	0.8
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	21/1/25	5.5	177	110	72	3	3.0	2.0	21	1.0
MW7	9/4/25	5.4	176	110	30	6	3.0	2.0	19	0.7
MW7	30/7/25	4.8	235	150	48	6	6.3	4.0	29	1.0
MW7	22/10/25	5.2	176	110	30	5	3.0	3.0	19	0.8
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	21/1/25	5.5	177	110	72	3	3.0	2.0	21	1.0
MW7	9/4/25	5.4	176	110	30	6	3.0	2.0	19	0.7
MW7	30/7/25	4.8	235	150	48	6	6.3	4.0	29	1.0
MW7	22/10/25	5.2	176	110	30	5	3.0	3.0	19	0.8
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	21/1/25	5.5	177	110	72	3	3.0	2.0	21	1.0
MW7	9/4/25	5.4	176	110	30	6	3.0	2.0	19	0.7
MW7	30/7/25	4.8	235	150	48	6	6.3	4.0	29	1.0
MW7	22/10/25	5.2	176	110	30	5	3.0	3.0	19	0.8

Table 26. Groundwater Quality Results – MW8

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
MW8	21/1/25	4.2	219	140	71	2	0.8	3.0	25	0.0
MW8	9/4/25	4.2	236	150	60	1	2.0	4.0	21	0.0
MW8	30/7/25	4.3	246	150	60	1	2.0	3.0	27	0.0
MW8	22/10/25	4.2	244	150	60	1	0.8	3.0	25	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	21/1/25	4.2	219	140	71	2	0.8	3.0	25	0.0
MW8	9/4/25	4.2	236	150	60	1	2.0	4.0	21	0.0
MW8	30/7/25	4.3	246	150	60	1	2.0	3.0	27	0.0
MW8	22/10/25	4.2	244	150	60	1	0.8	3.0	25	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	21/1/25	4.2	219	140	71	2	0.8	3.0	25	0.0
MW8	9/4/25	4.2	236	150	60	1	2.0	4.0	21	0.0
MW8	30/7/25	4.3	246	150	60	1	2.0	3.0	27	0.0
MW8	22/10/25	4.2	244	150	60	1	0.8	3.0	25	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
MW8	21/1/25	4.2	219	140	71	2	0.8	3.0	25	0.0
MW8	9/4/25	4.2	236	150	60	1	2.0	4.0	21	0.0
MW8	30/7/25	4.3	246	150	60	1	2.0	3.0	27	0.0
MW8	22/10/25	4.2	244	150	60	1	0.8	3.0	25	0.0

Table 27. Groundwater Quality Results – MW10

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
MW10	21/1/25	4.3	202	130	54	2	0.0	5.0	20	0.9
MW10	9/4/25	4.3	173	110	38	0	0.7	5.3	12	0.7
MW10	30/7/25	4.6	148	92	33	0	1.0	5.0	13	0.9
MW10	22/10/25	4.5	143	89	32	0	0.5	5.0	11	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	21/1/25	4.3	202	130	54	2	0.0	5.0	20	0.9
MW10	9/4/25	4.3	173	110	38	0	0.7	5.3	12	0.7
MW10	30/7/25	4.6	148	92	33	0	1.0	5.0	13	0.9
MW10	22/10/25	4.5	143	89	32	0	0.5	5.0	11	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	21/1/25	4.3	202	130	54	2	0.0	5.0	20	0.9
MW10	9/4/25	4.3	173	110	38	0	0.7	5.3	12	0.7
MW10	30/7/25	4.6	148	92	33	0	1.0	5.0	13	0.9
MW10	22/10/25	4.5	143	89	32	0	0.5	5.0	11	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	21/1/25	4.3	202	130	54	2	0.0	5.0	20	0.9
MW10	9/4/25	4.3	173	110	38	0	0.7	5.3	12	0.7
MW10	30/7/25	4.6	148	92	33	0	1.0	5.0	13	0.9
MW10	22/10/25	4.5	143	89	32	0	0.5	5.0	11	1.0

Table 28. Groundwater Quality Results – MW11

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
MW11 (Off Old Telegraph Rd)	21/1/25	5.3	154	96	37	3	3.0	2.0	16	3.0
MW11 (Off Old Telegraph Rd)	9/4/25	5.5	184	110	40	4	5.2	3.0	15	3.0
MW11 (Off Old Telegraph Rd)	30/7/25	5.8	243	150	40	21	15.0	5.3	20	5.0
MW11 (Off Old Telegraph Rd)	22/10/25	5.9	238	150	37	20	16.0	5.0	16	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
MW11 (Off Old Telegraph Rd)	21/1/25	5.3	154	96	37	3	3.0	2.0	16	3.0
MW11 (Off Old Telegraph Rd)	9/4/25	5.5	184	110	40	4	5.2	3.0	15	3.0
MW11 (Off Old Telegraph Rd)	30/7/25	5.8	243	150	40	21	15.0	5.3	20	5.0
MW11 (Off Old Telegraph Rd)	22/10/25	5.9	238	150	37	20	16.0	5.0	16	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
MW11 (Off Old Telegraph Rd)	21/1/25	5.3	154	96	37	3	3.0	2.0	16	3.0
MW11 (Off Old Telegraph Rd)	9/4/25	5.5	184	110	40	4	5.2	3.0	15	3.0
MW11 (Off Old Telegraph Rd)	30/7/25	5.8	243	150	40	21	15.0	5.3	20	5.0
MW11 (Off Old Telegraph Rd)	22/10/25	5.9	238	150	37	20	16.0	5.0	16	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
MW11 (Off Old Telegraph Rd)	21/1/25	5.3	154	96	37	3	3.0	2.0	16	3.0
MW11 (Off Old Telegraph Rd)	9/4/25	5.5	184	110	40	4	5.2	3.0	15	3.0
MW11 (Off Old Telegraph Rd)	30/7/25	5.8	243	150	40	21	15.0	5.3	20	5.0
MW11 (Off Old Telegraph Rd)	22/10/25	5.9	238	150	37	20	16.0	5.0	16	4.0

Table 29. Groundwater Quality Results – MW12

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
MW12	21/1/25	4.6	121	76	25	8	2.0	2.0	14	1.0
MW12	9/4/25	5.8	129	81	23	4	3.0	2.0	10	0.8
MW12	30/7/25	5.0	114	71	22	6	3.0	1.0	14	0.7
MW12	22/10/25	4.7	111	69	22	7	1.0	2.0	12	0.8
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	21/1/25	4.6	121	76	25	8	2.0	2.0	14	1.0
MW12	9/4/25	5.8	129	81	23	4	3.0	2.0	10	0.8
MW12	30/7/25	5.0	114	71	22	6	3.0	1.0	14	0.7
MW12	22/10/25	4.7	111	69	22	7	1.0	2.0	12	0.8
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	21/1/25	4.6	121	76	25	8	2.0	2.0	14	1.0
MW12	9/4/25	5.8	129	81	23	4	3.0	2.0	10	0.8
MW12	30/7/25	5.0	114	71	22	6	3.0	1.0	14	0.7
MW12	22/10/25	4.7	111	69	22	7	1.0	2.0	12	0.8
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	21/1/25	4.6	121	76	25	8	2.0	2.0	14	1.0
MW12	9/4/25	5.8	129	81	23	4	3.0	2.0	10	0.8
MW12	30/7/25	5.0	114	71	22	6	3.0	1.0	14	0.7
MW12	22/10/25	4.7	111	69	22	7	1.0	2.0	12	0.8

6.5.3 Wet Weather High Groundwater Level

As the limit on the depth of extraction is defined to be 2m above the Wet Weather High Groundwater level, groundwater monitoring is essential to determine this limit. The consent defines the Wet Weather high groundwater level as *'the rolling average of all recorded groundwater level measurements at any monitoring location on the site, as the first recorded following any rainfall event of at least 50mm over any 24hour period, and as contour mapped using this data'*. Rainfall data is also required to assist in the determining of the limit of extraction. The site received greater than 50mm on three 24-hour periods during 2025.

Table 30. Groundwater Depth Changes with Rainfall Event

Well ID	Regional Aquifers	Ave of All Depth Readings after latest >50mm/day rainfall event (2024)	Wet Weather High Groundwater RL (2025)	Lowest Level in Quarry at nearest location (March 2026)	Wet Weather High Groundwater RL (2018 Contours from Groundwater Study)
Rainfall Event 23/05/2025 51mm					
MW12	Hawkesbury Sandstone	195.1	197.1		
MW7	Hawkesbury Sandstone	183.2	185.2		
MW10	Maroota Sands	185.1	187.1	188.74	186 (southern boundary)
MW6	Maroota Sands	184.4	186.4	188.41	185 (approx. centre of channel)
MW11	Maroota Sands (downstream)	182.4	184.4		184 (northern boundary)
Rainfall Event 02/08/2025 69.2 mm					
MW12	Hawkesbury Sandstone	195.1	197.1		
MW7	Hawkesbury Sandstone	183.2	185.2		
MW10	Maroota Sands	185.1	187.1	188.74	186 (southern boundary)
MW6	Maroota Sands	184.4	186.4	188.41	185 (approx. centre of channel)
MW11	Maroota Sands (downstream)	182.5	184.5		184 (northern boundary)
Rainfall Event 12/12/2025 57.2 mm					
MW12	Hawkesbury Sandstone	195.2	197.2		

Well ID	Regional Aquifers	Ave of All Depth Readings after latest >50mm/day rainfall event (2024)	Wet Weather High Groundwater RL (2025)	Lowest Level in Quarry at nearest location (March 2026)	Wet Weather High Groundwater RL (2018 Contours from Groundwater Study)
MW7	Hawkesbury Sandstone	183.3	185.3		
MW10	Maroota Sands	185.1	187.1	188.74	186 (southern boundary)
MW6	Maroota Sands	184.4	186.4	188.41	185 (approx. centre of channel)
MW11	Maroota Sands (downstream)	182.6	184.6		184 (northern boundary)

The quarry floor levels are 2 metres above the Wet Weather High Groundwater Level and therefore compliant, as illustrated in the above table.

6.5.4 Interpretation and Effectiveness of Controls

Groundwater levels in the Maroota Sands channel have fallen across the majority of the site since 2022 though there were increases from June 2025. 2022 was a peak rainfall year. Levels in the bores on the perimeter of the paleochannel have remained steady.

The Maroota Sands channel has risen and fallen from those used in 2018 for the original groundwater modelling, however the rolling average of all depth readings remains below the previously modelled Wet Weather High Groundwater Level contours. The Hawkesbury Sandstone regional aquifer has also remained at approximately similar levels. These are illustrated on [Figure Five](#).

Water quality results show no impact from groundwater on surface water and vice versa. Downstream groundwater levels have trended down in the regional water table from lower rainfall, where the quarry is not impacting on downstream waters.

The quarry floor levels are greater than 2 metres above the Wet Weather High Groundwater Level, therefore the quarry floor is compliant. When necessary, the lowest levels of the pit are backfilled with clay inter-burden in accordance with measures described in the Groundwater Improvement Program to ensure that the floor was sealed during the higher rainfall periods encountered this report period.

6.5.5 Measures Proposed for Improvement

Specific monitoring improvements to be investigated are as follows.

- Continue groundwater and surface water level monitoring and report in accordance with the approved Groundwater Monitoring Program and Groundwater Management Plan.
- Undertake water quality monitoring and reporting in accordance with the approved Groundwater Monitoring Program and Water Management Plan.
- Apply to the Secretary to reduce the need for annual water management plan updates and 6-monthly reporting.

Plan of: Annual Review & Compliance Report 2025-2026 for Roberts Road Maroota Sand Quarry - Wet Weather High Groundwater Level Maroota Sands

Figure: SIX

Version/Date: V0 25/03/2026

Our Ref: 12783_HMA_AR2025-2026_Q006_V0_F6

Location: Maroota Quarry, Roberts Road, Maroota, NSW

Council: Hills Shire Council

Tenure: Not Applicable

Client: Hodgson Quarries & Plant Pty Ltd

Source: nearmap - Image Date 23/10/2024 Zone MGA 56

Survey: Fyfe Quarry Contours 24/02/2022
NSW Spatial Services ELVISDEM Surrounding Contours Dated May 2017, Spot Heights by Ross Robinson Consulting March 2025

Projection: GDA2020/MGA Zone 56 EPSG:7856

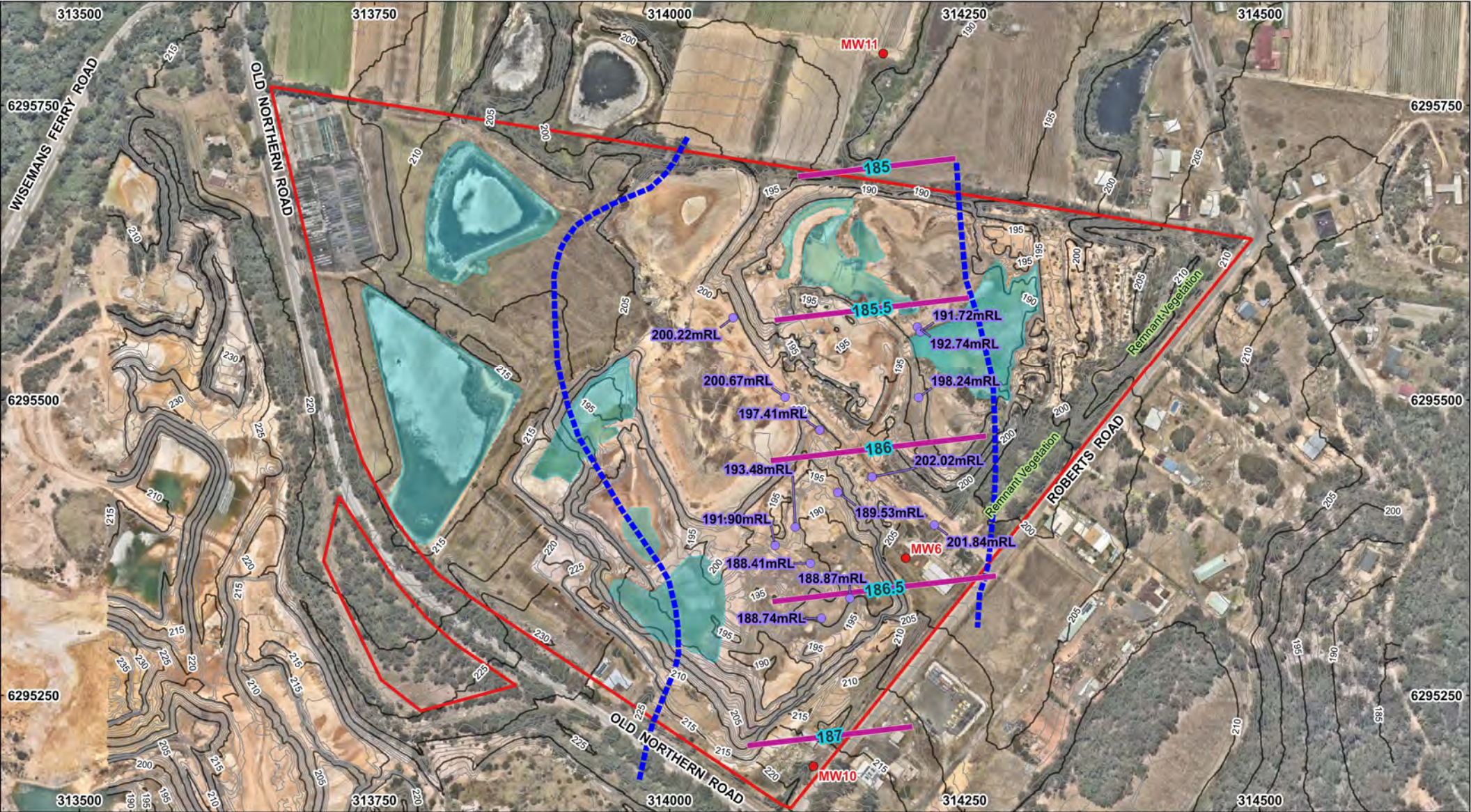
Contour Interval: 1m

Plan By: SK/JD

Project Manager: SK

vgt environmental compliance solutions and laboratories

This figure may be based on third party data which has not been verified by vgt and may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and vgt does not warrant its accuracy.



- Legend**
- Property Boundary
 - Contours of Wet Weather High GW Level (mRL)
 - Groundwater Monitoring Well Location
 - Dam Areas
 - Edge of Saturated Maroota Sands
 - 2025-2026 Survey Point

6.6 SITE WATER BALANCE

The Water Management Plan contains the Water Balance in accordance with the consent condition. It is updated annually.

6.6.1 Requirements and Predictions

Condition 44 (a) of the consent states:

[The Water Management Plan must include a]:

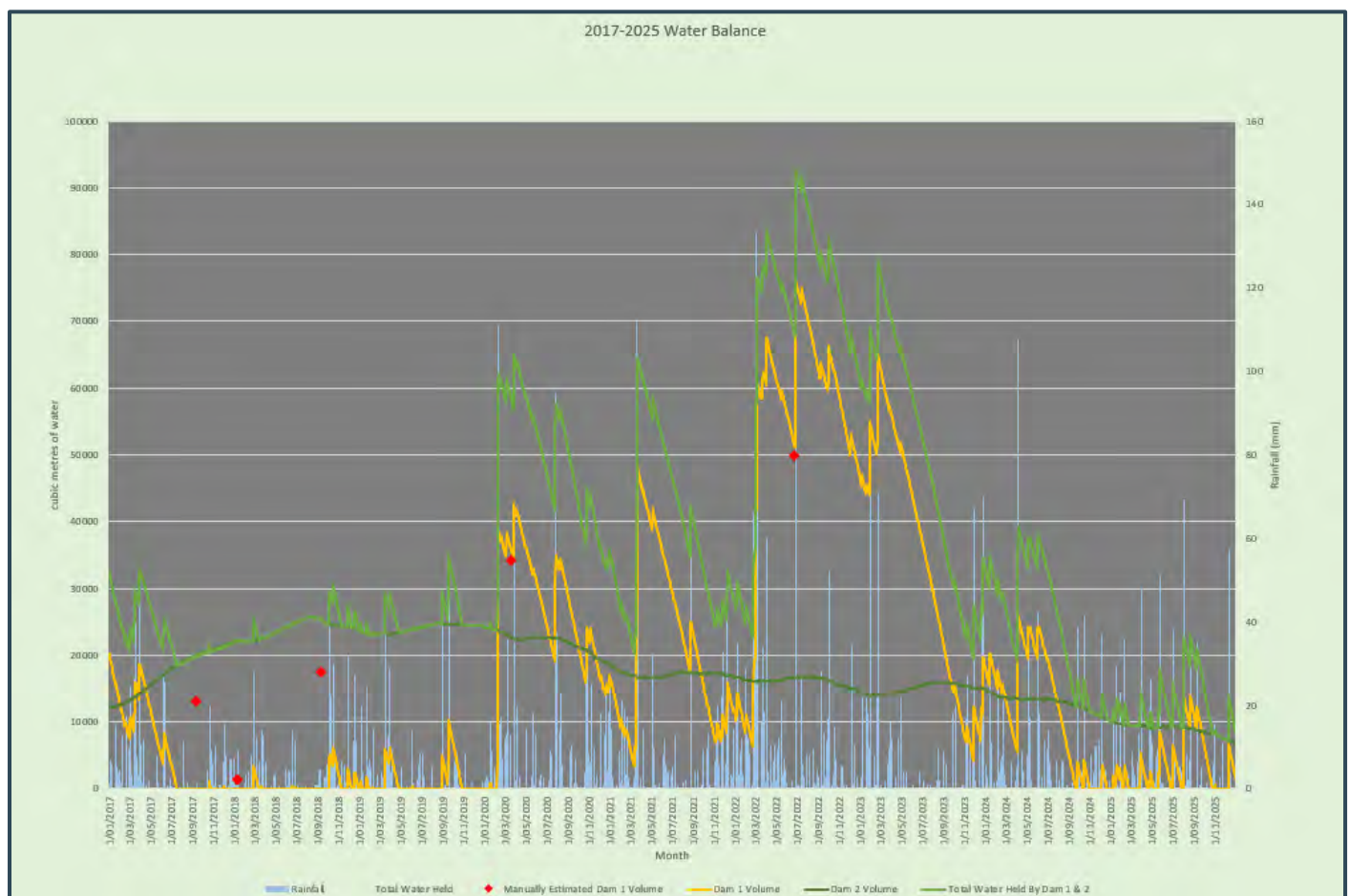
(a) Site Water Balance that:

- *includes details of:*
 - o *sources and security of water supply, including contingency planning;*
 - o *water use on site;*
 - o *water management on site, including groundwater inflows to the quarry voids and site discharges; and*
 - o *audit and reporting procedures, including comparisons of the site water balance each calendar year; and*
 - o *describes the measures that would be implemented to minimise clean water use on site and maximise recycling opportunities.*

6.6.2 Monitoring Results Compliance and Trends

Monitoring of water depths is discussed in Sections 6.4 and 6.5. The Site Water Balance for 2025 is shown below.

Graph 16. Site Water Balance 2025



6.6.3 Interpretation and Effectiveness of Controls

The water balance has focused on the currently disturbed catchments and Dams 1 and 2. Dams 3 and 4 are not controlled by the operator and usage/pumping rates are unknown. At present they play no part in the site operations and therefore are not included in the water balance. Rainfall from data obtained onsite was used in the calculations of the water balance.

A level logger was installed in Dam 1 in late September 2017 and data obtained up to 2022 has been applied to the model. At the time the logger was installed, the RL of the water in Dam 1 was recorded. Measurements were taken over the area of the dam to determine the depth of water to the base of the silt. The dam was found to be only up to 0.5m deep over the vast majority of its extent with the exception of a deeper void (up to 3m deep) around the pump intake. This data was used to project an approximate contour model of the base of the dam. From the model, the volume of the water within the dam has been estimated at various depths (RLs). These volumes were then correlated with the monthly average depth recorded by the logger and plotted against the volume of water held predicted by the water balance to assess its reliability.

There was some difficulty in correlating the predicted water volume against that recorded by the logger, particularly during periods of low water. It is surmised that the silt residing below the base of the dam holds a large quantity of water which is unable to be measured and this accounts for the discrepancy between the water balance calculation and the volume estimated using the logger data and 12D modelling. It is also noted that the distribution of silt within the Process Dam is not constant and the reliance on previous 12D modelling of the base of the dam is not reliable.

Regarding the above issues, the volumes of water held in the dams has previously been estimated using the area of the dams (calculated using QGIS and Nearmaps imagery) and an estimated depth from manual depth check measurements of the logger installed. The depth of water is taken as the difference from the base of the logger at 185.901m RL to the manual depth recorded at the time of interest. Dam 1 is currently partially backfilled as part of the rehabilitation and the logger has been removed. Previous calculated volumes, using the dam area and logger data, were generally consistent with the predictions (see [Graph 19](#)).

Dissipation from the dams has been included in the water balance assumptions since 2023. It is apparent there are additional losses during production each day than was not evident in earlier calculations, when the dam levels were extremely low. Dissipation from the Process Dam has been estimated at 65 cubic metres per day and 5 cubic metres per day for Dam 2.

From the plot of the predicted water balance, based on actual rainfall data, pumping rates and truck tonnages, the high rainfall replenished supplies of water in the dam. There were no plant stoppages due to lack of water this report period.

6.6.4 Measures Proposed for Improvement

The following measures will be instigated during the next reporting period.

- The Site Water Balance will be updated again for the 2026 Annual Review.

6.7 PROCESS WATER DAM

The Water Management Plan (version July 2018) was submitted to the (then) DoI Water and DPE to comply with the conditions of consent (Mod 2) and was approved by DPE on 22nd August 2018. An update was undertaken in December 2020 and was submitted via the Major Projects Portal for consultation in February, April and August 2021 (DA267-11-99-PA-11) as documented in submitted response number DA267-11-99-PA-13. An email request to NRAR for comment was sent again on 12/10/21 with a response received 26/10/21 that the matter was being reviewed. NRAR and DPIE-Water responded on 2nd Nov 2021 via the Major Projects portal that they had no comment. The WMP was then submitted to DPE via the Major Projects Portal, where comments requesting changes were advised in April 2022. Revision F2 dated June 2022 was approved on the 28th June 2022.

6.7.1 Requirements and Predictions

The following conditions are from the consent schedule 2:

38. *The Applicant shall not extract:*

(a) *below a depth of 182 m AHD in the footprint of the Process Water Dam, if not already extracted as at the date of Modification 2*

42 (b) *[The Surface Water Management Plan includes]*

- *a detailed description of design and construction criteria for the Process Water Dam based on a feasibility study of:*
 - o *capacity to construct multiple cells within the overall dam footprint (ie a two stage or three stage dam);*
 - o *whether the dam floor and walls are able to be effectively lined with compacted clay (especially for multiple cells);*
 - o *whether effective hydraulic separation can be achieved between such cells;*
 - o *rehabilitating such cells to create a single dam within the final landform; and*
 - o *the appropriateness of diverting runoff received from off-site around the dam;*

45. *The Applicant must ensure that the Process Water Dam is designed and constructed in a manner that satisfies the design and construction criteria for the Process Water Dam as developed under the Surface Water Management Plan (see condition 42(b) above).*

6.7.2 Monitoring Results Compliance and Trends

The deepest point of the dam remains approximately 185 m AHD in the vicinity of the bore and pump. The remainder of the top of the sediment remains at approximately 187 m AHD. This is compliant with all relevant criteria.

6.7.3 Interpretation and Effectiveness of Controls

The current Process Water Dam has proved effective in preventing uncontrolled discharge off-site. It is also providing sufficient supply of suitable water to the processing plant, with supplementation from the processing bore required.

As discussed in the Surface Water Management Plan and Rehabilitation and Landscape Plan, the three-stage construction of the dam to a depth of 178m AHD or firm base is no longer relevant, and the current monitoring shows that the base of the Process Dam is 2 m above the Wet Weather High Groundwater Level, therefore no changes will be made to the Process Dam other than the backfilling of the eastern portion for the dam for rehabilitation.

6.7.4 Measures Proposed for Improvement

The Process Dam will continue to be monitored in accordance with the Surface Water Management Plan.

6.8 NOISE AND ROAD NOISE

6.8.1 Requirements and Predictions

The NSW EPA varied the licence to include additional noise monitoring points in June 2023. These additional requirements have been included in the Noise Management Plan 2023 which has not yet been approved by the DPIE. To ensure compliance with the EPL, the additional points have been monitored this report period.

The annual noise monitoring was undertaken in November 2025 against the Mod 4 conditions which specifies the following Noise Impact Criteria:

Condition 47: *The Applicant must ensure that the noise generated by the development does not exceed the criteria in Table 2 at any residence on privately-owned land.*

Table 31. Operational Noise Criteria (dB(a))

Receiver	Day (7am to 6pm) LAeq(15min)	6am-7am LA1(1min)	6am-7am LAeq(15min)
B	44	50	40
All other receivers	43	50	40

Noise generated by the development is to be measured in accordance with the relevant requirements of the NSW Industrial Noise Policy (as may be updated or replaced from time-to-time).

Condition 47:

- (a) The excavator to be used is to be fitted with acoustic mufflers to achieve a noise level of approximately 76dB(A) when measured at 7 metres.
- (b) The on-site generator is to be fitted with an acoustic enclosure to ensure that noise levels less than 44dB(A) at 30m are achieved.
- (c) A noise compliance investigation is to undertaken within one month of the installation of the equipment to demonstrate compliance with the noise level limits stated in Conditions 47(a) and 47(b). The results of the compliance investigation are to be provided for the approval of the Secretary within 14 days of the completion of the investigations.

Condition 48: The Applicant shall ensure that traffic noise from the development does not exceed (L Aeq(1 hr)) 55 dB(A) between 7 am and 10 pm and 50 dB(A) between 10 pm and 7 am at any affected residence under adverse weather conditions. Where ambient Leq levels already exceed these criteria, the Applicant shall ensure that traffic noise from the development does not result in an increase of more than 2 dB(A).

Note: Adverse weather conditions means in the presence of winds up to 3 metres per second and/or temperature inversions of up to 4 degrees Centigrade per 100 metres.

The EPL specifies the following noise related limits:

Table 32. Noise-related Conditions

Condition	Description																
L3.1	Noise generated at the premises that is measured at each noise monitoring point established under this licence must not exceed the noise levels specified in Column 4 of the table below for that point during the corresponding time periods specified in Column 1 when measured using the corresponding measurement parameters listed in Column 2. POINT 1,3,4,5,6,7 <table><tr><th>Time period</th><th>Measurement parameter</th><th>Measurement frequency</th><th>Noise level dB(A)</th></tr><tr><td>Day</td><td>LAeq (15 minute)</td><td>-</td><td>43</td></tr></table> POINT 2 <table><tr><th>Time period</th><th>Measurement parameter</th><th>Measurement frequency</th><th>Noise level dB(A)</th></tr><tr><td>Day</td><td>LAeq (15 minute)</td><td>-</td><td>44</td></tr></table>	Time period	Measurement parameter	Measurement frequency	Noise level dB(A)	Day	LAeq (15 minute)	-	43	Time period	Measurement parameter	Measurement frequency	Noise level dB(A)	Day	LAeq (15 minute)	-	44
Time period	Measurement parameter	Measurement frequency	Noise level dB(A)														
Day	LAeq (15 minute)	-	43														
Time period	Measurement parameter	Measurement frequency	Noise level dB(A)														
Day	LAeq (15 minute)	-	44														
L3.2	For the purpose of condition L3.1: a) Day means the period from 7am to 7pm Monday to Saturday and the period from 8am to 6pm Sunday and public holidays.																

Condition	Description				
L3.3	a) The noise limits set out in Condition L3.1 apply under the meteorological conditions shown in the table below. b) For those meteorological conditions not referred to in Condition L3.3(a), the noise limits that apply are the noise limits in Condition L3.1 plus 5dB. <table border="1"> <tr> <th>Assessment Period</th><th>Meteorological Conditions</th></tr> <tr> <td>Day</td><td>Stability Categories A, B, C, D and E with wind speeds up to and including 3m/s at 10m above ground level.</td></tr> </table>	Assessment Period	Meteorological Conditions	Day	Stability Categories A, B, C, D and E with wind speeds up to and including 3m/s at 10m above ground level.
Assessment Period	Meteorological Conditions				
Day	Stability Categories A, B, C, D and E with wind speeds up to and including 3m/s at 10m above ground level.				
L3.4	For the purpose of condition L3.3: a) The meteorological conditions are to be determined from meteorological data obtained from a meteorological weather station. b) Stability category shall be determined using the following method from fact Sheet D of the Noise Policy for Industry (NSW EPA, 2017): i. Pasquill-Gifford stability classification scheme (section D1.3.1).				
L3.5	To assess compliance: a) with LAeq (15 minutes) noise limits in condition L3.1, the noise measurement equipment must be located: (i) approximately on the property boundary, where any residence is situated 30 metres or less from the property boundary closest to premises: or where applicable, (ii) in an area within 30 metres of a residence facade, but not closer than 3 metres where any residence on the property is situated more than 30 metres from the property boundary closest to the premises; or, where applicable, (iii) in an area within 50 metres of the boundary of a National Park or Nature Reserve, (iv) at any other location identified in condition L3.1 b) with the LAeq (15 minutes) noise limits in condition L3.1, the noise measurement equipment must be located: (i) at the reasonably most affected point at a location where there is no residence at the location; or, (ii) at the reasonably most affected point within an area at a location prescribed by condition L3.5(a).				
L3.6	A non-compliance of Condition L3.1 will still occur where noise generated from the premises is measured in excess of the noise limit at a point other than the reasonably most affected point at the locations referred to in condition L3. 5 (a) or L3.5 (b). Notes to L3.5 and L3.6: The reasonably most affected point is a point at a location or within an area at a location experiencing or expected to experience the highest sound pressure level from the premises.				
L3.7	For the purpose of determining the noise generated from the premises, the modifying factor corrections in Table C1 in Fact Sheet C of the <i>Noise Policy for Industry</i> (NSW EPA, 2017) may be applied, if appropriate, to the noise measurements by the noise monitoring equipment.				
L3.8	Noise measurement must not be undertaken where rain or wind speed at microphone level will affect the acquisition of valid measurements.				

The Noise Impact Assessment prepared for the Environmental Assessment for Mod 2 (Nexus Environmental Planning Pty Ltd, September 2015) made the following commitments.

Table 33. Predicted Noise Impacts, 2015 LAeq,15min (dBA)

Scenario	All Locations
Typical Operations	43

The Mod 4 Predicted Noise Levels at Receivers LAeq, 15 min dB(A) predicted an exceedance by 1dB(A) at Receiver RR10 when VENM emplacement and extraction are undertaken in Stage 1A and 5A combined. It was stated that “As the noise predictions of Table 7.22 are based on worst-case site noise emissions, it is expected that compliance with noise limits will be achievable by adherence to the ongoing noise control strategies in the Quarry Operational and Road Noise Management Plan (ORNMP) (MAC, 2016).”

Table 34. Predicted Noise Impacts, Mod 4 LAeq,15min (dBA)

Scenario	All Locations
Typical Operations	43*

*Except for minor 1dB(A) exceedances at Receiver B (Receiver RR10). (Umwelt (Australia) Pty Limited, 2019)

6.8.2 Monitoring Results Compliance and Interpretation

Results of operational and road noise monitoring undertaken in November 2025 are given in *Appendix H*. The report states:

“Attended monitoring conducted between Wednesday 19 November 2025 and Thursday 20 November 2025 identified that Roberts Road Sand Quarry noise emissions were audible on several occasions, although satisfying the relevant EPL noise limits. A review of monitoring data and operator attended observations determined that Roberts Road Sand Quarry contributions are below the EPL and Consent limits for all assessment periods.”

Further details and interpretation of results are given in the attached report.

Table 35. Operator-Attended Noise Survey Results

EPL Receiver/ Consent Receiver	L _{Amax}	L _{Aeq}	L _{A90}	Quarry L _{Aeq} 15 min / 1min	Criteria L _{Aeq} 15 min / 1min	Comment
Day Time Attended Monitoring Results – 19/11/2025						
1/A	68	43	36	<36	43 / NA	Compliance achieved
2/B	80	58	46	42	44 / NA	Compliance achieved
3/C	85	66	46	<35	43 / NA	Compliance achieved
4/D	85	64	39	40	43 / NA	Compliance achieved
5/E	87	62	37	<32	43 / NA	Compliance achieved
6/F	77	49	37	39	43 / NA	Compliance achieved
7/G	82	54	40	41	43 / NA	Compliance achieved
Morning Shoulder Attended Monitoring Results – 20/11/2025						
1/A	74	48	38	37/43	40 / 50	Compliance achieved
2/B	81	51	33	36/40	40 / 50	Compliance achieved
3/C	96	71	48	<33/<33	40 / 50	Compliance achieved
4/D	81	58	37	<35/<42	40 / 50	Compliance achieved
5/E	90	68	43	<33/<40	40 / 50	Compliance achieved
6/F	78	55	37	37/44	40 / 50	Compliance achieved
7/G	85	56	37	37/48	40 / 50	Compliance achieved
2024	All sites compliant					
2023	All sites compliant					
2022	All sites compliant					
2021	All sites compliant					
2020	All sites compliant					
2019	All sites compliant					
2018	All sites compliant					

Table 36. Road Noise Survey Results

Period	No of Quarry Trucks	Overall Measured dB LAeq (1hr)	Overall Calculated dB LAeq Project Truck Contribution	Criteria	Comment
6am to 7am	2	70	48	50	Compliance achieved
7am to 8am	3	70	50	55	Compliance achieved
2024				Compliant	
2023				Compliant	
2022				Compliant	
2021				Compliant	
2020				Compliant	
2019				Compliant	
2018				Compliant	

Sound Power Levels were not tested on the site plant and equipment this year. Sound Power levels of existing machinery are given in *Table 42*. There was no new equipment purchased and no atypical works undertaken.

Table 37. Sound Power of Equipment

Plant	Overall Sound Power (dBA)	Criteria in Sound Power dBA	Comment
PC350 Komatsu Excavator	101	101 *	Compliance achieved.
L180G Volvo Loader	103	N/A	
Sand Plant, conveyors, log wash and stacker	100	N/A	
PC400 Komatsu Excavator – commissioning test only	105	101 *	This excavator has been decommissioned and removed off the site.
Total Fleet Sound Power	109	113 #	Compliance with expected modelling achieved.

* Condition 47a states: 'The excavator to be used is to be fitted with acoustic mufflers to achieve a noise level of approximately 76dBA when measured at 7m.' (This equates to a sound power level of 101dBA.)

'Typical Scenario and Plant Numbers' assessed in the Mod 2 Acoustic Assessment.

6.8.3 Trends and Effectiveness of Controls

6.8.3.1 Noise Trends

Table 36 and *Table 37* summarises 2025 attended noise monitoring results during quarry operations and past noise compliance status. Noise measured at the nominated residences during quarry operations in the reporting period were compliant with Mod 4 criteria.

6.8.3.2 Effectiveness of Noise Management Controls

Table 38. Effectiveness of Noise Management Controls

Control	Interpretation	Effective?
Perimeter Bunds	Noise measured at residences complies with requirements and predictions	Yes
Temporary bunds when extracting in close proximity to residences	Temporary bunds are in place around the current extraction area. Noise measured at residences complies with requirements and predictions. Noise measured at residences lower than previous monitoring.	Yes
Training and awareness for employees and truck drivers	Noise measured at residences complies with requirements and predictions. Road noise attributed to the site complies with requirements and predictions.	Yes
Mufflers on excavators	Sound power levels were measured on two excavators; one did not comply, however off-site noise remains inaudible.	Yes
New equipment purchased checked by qualified noise consultant for compliance prior to commissioning	Total fleet sound power levels remain less than modelled	Yes

6.8.4 Measures Proposed for Improvement

As seen from the previous section, the current controls and mitigation measures in place are effective. Any new equipment purchased after the annual noise monitoring event, will be tested during the next round.

Should atypical works be undertaken, extraction outside of temporary bunds (surface extraction), or a dozer ripping sandstone during initial topsoil and overburden extraction, a suitably qualified noise consultant will be commissioned to undertake attended noise monitoring during this time. NMP has been updated to include these points but not yet approved by DPE.

6.9 FLORA AND FAUNA

6.9.1 Requirements and Predictions

The consent specifies the following requirements with regard to flora and fauna management:

Table 39. Flora and Fauna Management Conditions

Condition number	Condition Summary	Details of compliance status	Compliant
55	The Applicant shall prepare a Flora and Fauna Management Plan as part of the EMP. The Plan shall be prepared in consultation with National Parks and Wildlife Service and Council, (further detail in consent)	Flora and Fauna Management Plan has been prepared and updated in 2016. OEH (NPWS) was consulted but declined to make comments. Council comments have been included in report	Yes
56	The Applicant shall maintain the revegetated areas for the duration of the Consent. Maintenance may include: (details in consent)	Limited rehabilitation has been undertaken on the site due to the cell staging that has been required. Backfilling of the Process Dam is not complete and is not ready for vegetation. All bundwalls are vegetated and stable.	Yes

Objectives and targets from the Flora and Fauna Management Plan:

Table 40. Flora and Fauna Management Objectives and Targets

Objective / Target	Compliance Status
To protect known threatened flora species on the site and ensure correct procedures are applied in the event of other threatened flora or fauna species being located on the site.	Known species identified, baseline monitoring undertaken in Jan 2018. Monitoring was undertaken in March 2025.
Inspections of site flora and fauna to show minimal impacts from operations.	Trends over time show minimised impacts.
Consider the post extraction land use in the management and maintenance of conserved and rehabilitated vegetation.	Conserved vegetation is managed in accordance with Landscape and Rehabilitation Plan

6.9.2 Monitoring Results Compliance and Trends

Monitoring was undertaken in March 2025 and full report is available in Appendix I. The conclusion of the 2025 report was that the *'Overall the rehabilitation and biodiversity of the site is within the expectations of the life of the quarry. Continued weed management would benefit the site, particularly the WoNS'*.

6.9.3 Interpretation and Effectiveness of Controls

Weed management activities were undertaken regularly, focussing on the areas adjacent to the carpark and along Roberts Rd where high concentrations of weeds are located as noted in the Biodiversity Report.

6.9.4 Measures Proposed for Improvement

The Biodiversity report recommended a monthly weed control plan given in Appendix D of the Biodiversity Report which is reproduced below. In response to requested actions by DPE, a weed management plan is produced regularly. Examples of weed reports are included in *Appendix J*. Weed control is discussed in the Biodiversity Monitoring Report undertaken in March 2025.

Table 41. Recommended Weed Control

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
African Lovegrass	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide				Herbicide	Herbicide	Herbicide	Herbicide
Blackberry	Herbicide	Herbicide	Herbicide						Herbicide	Herbicide	Herbicide	Herbicide
Bridal Creeper	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal
Cobblers Pegs	Hand removal	Hand removal	Hand removal	Hand removal					Herbicide	Herbicide	Herbicide	Hand removal
Crofton Weed	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide				Herbicide	Herbicide	Herbicide	Herbicide
Fireweed	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal
Lantana	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide				Herbicide	Herbicide	Herbicide	Herbicide
Paspalum	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide			Herbicide	Herbicide	Herbicide	Herbicide
Rhodes Grass	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide
Whiskey Grass	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Herbicide	Herbicide	Herbicide	Hand removal

6.10 REHABILITATION

The Landscape and Rehabilitation Management Plan (LRMP) was updated in July 2023, no approval has been received to date from DPE. The previous LRMP was approved in August 2018.

6.10.1 Requirements and Predictions

Performance indicators and completion criteria were provided in the LRMP and are presented in [Table 44](#). None of these criteria have yet been achieved. The LRMP has been updated to the Mod 4 final landforms presented in *Appendix A*. The Rehabilitation and Conservation Bond has been calculated to the value of \$313,619.00 and accepted by DPE via correspondence received 18th December 2023. The bond was paid in April 2024.

Table 42. Rehabilitation Performance Indicators and Completion Criteria

Objective	Performance Indicator	Completion Criteria	Monitoring Methodology and Responsibility	Monitoring Frequency	Justification /Source	Current Progress and Expected Completion
Phase 1 - Decommissioning						
Domain 1 - Infrastructure						
Surface Infrastructure to be decommission and removed, unless the Secretary agrees otherwise. Minimise the adverse socio-economic effects of quarry closure.	Services not required for final landuse are disconnected.	Relevant services disconnected by qualified contractors	Report from qualified contractors	Upon decommissioning completion	EIS/This report	Not commenced/ Post extraction completion
	Infrastructure not required for final land use is removed	Relevant infrastructure removed.	Inspection and report	Upon decommissioning completion	EIS/This report	Not commenced/ Post extraction completion
	Roads not required for final landuse are removed.	Roads removed unless specified to be retained	Inspection and report	Upon decommissioning completion	EIS/This report	Not commenced/ Post extraction completion
	Roads required for final landuse are reduced in width (if required)	Roads reduced in width to that suitable for final land use.	Inspection and report	Upon decommissioning completion	EIS/This report	Not commenced/ Post extraction completion
	Hardstand areas reduced to a size required for the final landuse	Hardstand areas reduced in size to that suitable for final landuse.	Inspection and report	Upon decommissioning completion	EIS/This report	Not commenced/ Post extraction completion
	No hazardous material remains	All hazardous material removed	Contamination report prepared by qualified person. Register of Hazardous Material.	Following decommissioning with follow up validation testing as required.	This Report	Not commenced/ Post extraction completion
	No remaining product stockpiles	All remaining product stockpiles are removed.	Inspection and report	Upon decommissioning completion	EIS/This report	Not commenced/ Post extraction completion

Objective	Performance Indicator	Completion Criteria	Monitoring Methodology and Responsibility	Monitoring Frequency	Justification /Source	Current Progress and Expected Completion
Phase 1 – Decommissioning (continued)						
Domain 3 - Water Management						
Site to be safe, stable and non-polluting	No sediment laden water enters the remaining clean water dam system.	Final water body has been desilted, if required to increase capacity and minimise sediment entrainment in discharged water. The catchment areas for the final water body are sufficiently rehabilitated so as to only contain clean water runoff.	Inspection by quarry manager and suitably qualified person.	On construction completion and monthly until completion	DECC- Managing Urban Stormwater, EIS, SWMP and this report	Final Water Body construction not commenced/ Post extraction completion
	Sediment dam discharge due to overtopping does not entrain sediment.	Final water body will be designed to Best Practice according to the 'Blue Book' Criteria for a 5 day 90th percentile storm event. All drains will be designed for the 1 in 10-year design storm event and do not re-entrain sediment. The dam spillway will be designed for the 1 in 100-year design storm event.	Inspection by quarry manager and suitably qualified person.	For the final water body, on construction completion and monthly until completion.	DECC- Managing Urban Stormwater, EIS, SWMP and this report	Final Water Body construction not commenced/ Post extraction completion
Domain 4 – Overburden Emplacement Area						
Final landform integrated with surrounding natural landforms as far as is reasonable and feasible, and minimising visual impacts when viewed from surrounding land.	No remaining overburden stockpiles	All overburden stockpiles are removed and or incorporated into the final landform.	Inspection and report	Upon decommissioning completion	EIS, and this report	Not commenced/ Post extraction completion
	Sediment retained in water management structures	Final water body will be designed to Best Practice according to the 'Blue Book' Criteria for a 5 day 90th percentile storm event. All drains will be designed for the 1 in 10-year design storm event and do not re-entrain sediment. The dam spillway will be designed for the 1 in 100-year design storm event.	Existing dams currently meet capacity specifications (see SWMP). Final water body is designed to exceed the required capacity and will be assessed once complete. Inspection by quarry manager and suitably qualified person.	On construction completion and monthly until completion.	DECC- Managing Urban Stormwater, EIS, SWMP and this report	Final Water Body construction not commenced/ Post extraction completion
Domain 6 - Open Cut Void						
No activities within this domain are required during this phase						
Domain 9 - Native Vegetation Conservation Area						
No activities within this domain are required during this phase						

Objective	Performance Indicator	Completion Criteria	Monitoring Methodology and Responsibility	Monitoring Frequency	Justification /Source	Current Progress and Expected Completion
Phase 2 - Landform Establishment						
Domain 1 – Infrastructure						
Domain landform is safe, stable and non-polluting. Final landform integrated with surrounding natural landforms as far as is reasonable and feasible, and minimising visual impacts when viewed from surrounding land.	Final landform contours similar to proposed final landform contours.	Slope lengths in rehabilitated areas shall not exceed 20m for a 3H: 1V batter i.e., an earth bank shall be installed. Slope lengths in rehabilitated areas shall not exceed 30m for a 4H: 1V batter i.e., an earth bank shall be installed. Slope lengths in rehabilitated areas shall not exceed 40m for batters >4H: 1V i.e., an earth bank shall be installed.	Survey on completion by registered surveyor.	Upon completion of landform establishment phase.	DECC- Managing Urban Stormwater, EIS, SWMP and this report	Not commenced/ Post extraction completion
	Suitable sediment and erosion controls in place.	Final water body will be designed to Best Practice according to the 'Blue Book' Criteria for a 5 day 90th percentile storm event. All drains will be designed for the 1 in 10-year design storm event and do not re-entrain sediment. The dam spillway will be designed for the 1 in 100-year design storm event.	Final water body is designed to exceed the required capacity and will be assessed once complete. Inspection by quarry manager and suitably qualified person.	Visual Inspection on construction completion and monthly until completion.	DECC- Managing Urban Stormwater, EIS, SWMP and this report	Final Water Body construction not commenced/ Post extraction completion
Domain 3 - Water Management						
Final water body is non-polluting	Final water body is constructed to the engineer's design specification.	The dam dimensions, location and walls construction will be to the engineer's design specification (yet to be determined). The dam spillway will be designed for the 1 in 100-year design storm event.	Inspection by quarry manager and suitably qualified person.	During construction as determined by the engineer	DECC- Managing Urban Stormwater and engineer's plans	Final Water Body construction not commenced/ Post extraction completion
	Final water body is not a pollution hazard to the downstream environment.	Final water body will be designed to Best Practice according to the 'Blue Book' Criteria for a 5 day 90th percentile storm event. All drains will be designed for the 1 in 10-year design storm event and do not re-entrain sediment. The dam spillway will be designed for the 1 in 100-year design storm event.	Final water body is designed to exceed the required capacity post establishment and will be assessed once complete. Inspection by quarry manager and suitably qualified person.	Visual Inspection on construction completion and monthly until completion.	DECC- Managing Urban Stormwater, EIS, SWMP and this report	Final Water Body construction not commenced/ Post extraction completion
Domain 4 - Overburden Emplacement Area						
Domain landform is safe, stable and non-polluting. Final landform integrated with surrounding natural landforms as far as is reasonable and feasible, and minimising visual impacts when viewed from surrounding land.	Final landform contours similar to proposed final landform contours.	Slope lengths in rehabilitated areas shall not exceed 20m for a 3H: 1V batter i.e., an earth bank shall be installed. Slope lengths in rehabilitated areas shall not exceed 30m for a 4H: 1V batter i.e., an earth bank shall be installed. Slope lengths in rehabilitated areas shall not exceed 40m for batters >4H: 1V i.e., an earth bank shall be installed.	Survey on completion by registered surveyor.	Upon completion of landform establishment phase.	DECC- Managing Urban Stormwater, EIS, SWMP and this report	Not commenced/ Post extraction completion

Objective	Performance Indicator	Completion Criteria	Monitoring Methodology and Responsibility	Monitoring Frequency	Justification /Source	Current Progress and Expected Completion
Domain 6 - Open Cut Void						
Domain landform is safe, stable and non-polluting. Final landform integrated with surrounding natural landforms as far as is reasonable and feasible, and minimising visual impacts when viewed from surrounding land. Minimise the height and slope of batters. Minimise the drainage catchment. Ensure public safety	Final landform contours similar to proposed final landform contours.	Slope lengths in rehabilitated areas shall not exceed 20m for a 3H: 1V batter i.e., an earth bank shall be installed. Slope lengths in rehabilitated areas shall not exceed 30m for a 4H: 1V batter i.e., an earth bank shall be installed. Slope lengths in rehabilitated areas shall not exceed 40m for batters >4H: 1V i.e., an earth bank shall be installed.	Survey on completion by registered surveyor.	Upon completion of landform establishment phase.	DECC- Managing Urban Stormwater, EIS, SWMP and this report	Backfilling of the void in the northeast (Process Dam) with VENM and ENM has commenced / Post extraction completion
Minimise the drainage catchment. Ensure public safety	Landform drains towards water management domain	Final water body will be designed to Best Practice according to the 'Blue Book' Criteria for a 5 day 90th percentile storm event. All drains will be designed for the 1 in 10-year design storm event and do not re-entrain sediment. The dam spillway will be designed for the 1 in 100-year design storm event.	Existing dams currently meet capacity specifications (see SWMP). Final water body is designed to exceed the required capacity and will be assessed once complete. Inspection by quarry manager and suitably qualified person.	Visual Inspection on construction completion and monthly until completion.	DECC- Managing Urban Stormwater, EIS, SWMP and this report	Final Water Body construction not commenced/ Post extraction completion
	Available topsoils are stockpiled appropriately and reused on the site	Available topsoil is spread over final landform	Site contractor to record growth medium management procedures to the quarry manager. Records to include amounts stripped, locations and depths re-spread.	As required during construction.	DECC- Managing Urban Stormwater, EIS, SWMP and this report	Not commenced/ Post extraction completion
Ensure public safety	Tracks suitable for private access or pedestrian usage	Slopes of major tracks <10° or have cross drains/banks installed. Where unsuitable soils are present, tracks to be stabilised with crushed bricks, concrete, gravel or similar.	Survey on completion by registered surveyor. Stabilisation methods to be recorded and reported by Site Contractor to the quarry manager.	Upon completion of landform establishment phase.	DECC- Managing Urban Stormwater, EIS, SWMP and this report	Not commenced/ Post extraction completion
Domain 9 - Native Vegetation Conservation Area						
No activities within this domain are required during this phase						

Objective	Performance Indicator	Completion Criteria	Monitoring Methodology and Responsibility	Monitoring Frequency	Justification /Source	Current Progress and Expected Completion
Phase 3 - Growth Medium Development						
Domain A - Infrastructure						
No revegetation is to occur in this domain; therefore, no activities are required during this phase						
Domain B - Water Management						
No revegetation is to occur in this domain; therefore, no activities are required during this phase						
Domain C & D - Rehabilitation Area – Grassland/Woodland						
Domain landform is safe, stable and non-polluting. Final landform integrated with surrounding natural landforms as far as is reasonable and feasible, and minimising visual impacts when viewed from surrounding land. The quarry pit floor is landscaped and revegetated using improved pasture species, native trees and understorey species.	Compacted surfaces deep ripped to 300mm along contour.	Photographs of ripped areas	Inspection by quarry manager and suitably qualified person.	Following Deep ripping	EIS and this report	Not commenced/ Post landform establishment
	Hydromulch Area- Minimum 300mm of subsoil emplaced over deep ripped surface. Minimum of 100mm of topsoil emplaced over subsoil layer.	Small 'test pits' dug and photographed to show final media depth, report indicates required thicknesses achieved.	Photographs of test pits reported by quarry manager and/or suitably qualified person	Following spreading of soils.	EIS and this report	Not commenced/ Post landform establishment
	Buffer Setbacks and Embankments with 1V:3H Grade- Minimum 300mm of subsoil emplaced over deep ripped surface. Minimum of 100mm of topsoil emplaced over subsoil layer. Minimum of 75mm of organic mulch emplaced over topsoil.	Small 'test pits' dug and photographed to show final media depth, report indicates required thicknesses achieved.	Photographs of test pits reported by quarry manager and/or suitably qualified person	Following spreading of soils.	EIS and this report	Not commenced/ Post landform establishment
	Embankments Steeper than 1V:3H Grade- Minimum 300mm of subsoil emplaced over deep ripped surface. Minimum of 100mm of topsoil emplaced over subsoil layer. Jute matting pinned to topsoiled bank. Minimum of 75mm of organic mulch emplaced over topsoil.	Small 'test pits' dug and photographed to show final media depth and presence of jute matting, report indicates required thicknesses achieved.	Photographs of test pits reported by quarry manager and/or suitably qualified person	Following spreading of soils.	EIS and this report	Not commenced/ Post landform establishment

Objective	Performance Indicator	Completion Criteria	Monitoring Methodology and Responsibility	Monitoring Frequency	Justification /Source	Current Progress and Expected Completion
	Permanent Bundwalls- Minimum 300mm of topsoil emplaced over deep ripped surface. Jute matting pinned to topsoiled bank. Minimum of 75mm of organic mulch emplaced over topsoil.	Small 'test pits' dug and photographed to show final media depth and presence of jute matting, report indicates required thicknesses achieved.	Photographs of test pits reported by quarry manager and/or suitably qualified person	Following spreading of soils.	EIS and this report	Not commenced/ Post landform establishment
Domain J - Native Vegetation Conservation Area						
No activities within this domain are required during this phase						

Objective	Performance Indicator	Completion Criteria	Monitoring Methodology and Responsibility	Monitoring Frequency	Justification /Source	Current Progress and Expected Completion
Phase 4 - Ecosystem and Land use Establishment						
Domain A - Infrastructure						
No revegetation is to occur in this domain; therefore, no activities are required during this phase						
Domain B - Water Management						
Wetlands water management structure to remain therefore no activities required during this phase						
Domain C & D - Rehabilitation Area – Grassland/Woodland						
Domain landform is safe, stable and non-polluting. Final landform integrated with surrounding natural landforms as far as is reasonable and feasible, and minimising visual impacts when viewed from surrounding land. The quarry pit floor is landscaped and revegetated using improved pasture species, native trees and understorey species.	Revegetation species mix applied as suggested in Rehabilitation Management Plan	A target coverage factor of 70% will be subject to further refinement. Low mortality of plants used in progressive revegetation with 75% becoming established 3 years.	Monitoring including photography to be conducted by suitably qualified person and reported annually.	Monthly for the first 6 months, then 6 monthly until completion criteria achieved	EIS and Rehabilitation Management Plan	Not commenced/ Ongoing
	The rehabilitated area does not constitute an erosion hazard.	Total projected foliage cover is greater than or equal to 70%.	Monitoring including photography to be conducted by suitably qualified person and reported annually.	Monthly for the first 6 months, then 6 monthly until completion criteria achieved	DECC- Managing Urban Stormwater, EIS, SWMP and this report	Not commenced/ Ongoing
	Weeds not preventing revegetation from establishing	Weed cover no more than 25% over a 3-year monitoring period within any given areas where revegetation has occurred. Note that non-native species purposefully planted to control erosion are excluded from this target.	Monitoring including photography to be conducted by suitably qualified person and reported annually.	Monthly for the first 6 months, then 6 monthly until completion criteria achieved	EIS and Rehabilitation Management Plan	Not commenced/ Ongoing
	Grazing by native and domestic fauna not adversely impacting on ecosystem development	Rural fences and gates installed around disturbed area to prevent grazing of domestic stock. Feral animal controls will be implemented if required.	Monitoring including photography to be conducted by suitably qualified person and reported annually.	Monthly for the first 6 months, then 6 monthly until completion criteria achieved	EIS and Rehabilitation Management Plan	Not commenced/ Ongoing
	Branches and logs of any trees cleared on the site are to be spread within the rehabilitation areas to provide habitat for ground fauna	Evidence of logs and other fallen timber spread over re rehabilitated areas. Ground fauna species of similar diversity to adjacent areas of similar habitat.	Monitoring including photography to be conducted by suitably qualified person and reported annually.	Monthly for the first 6 months, then 6 monthly until completion criteria achieved	EIS and Rehabilitation Management Plan	Not commenced/ Ongoing

Domain J - Native Vegetation Conservation Area						
Final landform integrated with surrounding natural landforms as far as is reasonable and feasible, and minimising visual impacts when viewed from surrounding land.	The rehabilitated area does not constitute an erosion hazard.	Total projected foliage cover is greater than or equal to 70%.	Monitoring including photography to be conducted by suitably qualified person and reported annually.	Monthly for the first 6 months, then 6 monthly until completion criteria achieved	DECC- Managing Urban Stormwater EIS	Not commenced/ Ongoing
	Weeds not overtaking existing vegetation	Monitoring confirms that after 2 years the non-native/non-target species (weeds) represents less than 20%of projected foliage cover or equivalent to surrounding vegetation not disturbed by mining activities.	Monitoring including photography to be conducted by suitably qualified person and reported annually.	Monthly for the first 6 months, then 6 monthly until completion criteria achieved	EIS and Rehabilitation Management Plan	Not commenced/ Ongoing

Objective	Performance Indicator	Completion Criteria	Monitoring Methodology and Responsibility	Monitoring Frequency	Justification /Source	Current Progress and Expected Completion
Phase 5 - Ecosystem and Land use Sustainability						
Domain A - Infrastructure						
No activities are required during this phase						
Domain B - Water Management						
Domain landform is safe, stable and non-polluting.	Water quality monitoring results show that the final water body is non-polluting should it overtop and is suitable for stock water.	Water Quality meets the objective of Section 120 of the Protection of the Environment Operations Act 1997: and Water Quality meets the objective of the ANZECC Guidelines for 90% protection of freshwater ecosystems.	Water to be monitored for pH, Turbidity, Oil & Grease and TSS on a once off basis. NATA laboratory	Once off basis.	EA and Rehabilitation Management Plan	Not commenced/ Post completion
Domain C & D - Rehabilitation Area – Grassland/Woodland						
Landscaped and revegetated using improved pasture species, native trees and understorey species.	Vegetation self-sustaining.	Monitoring confirms: - Evidence of new growth of endemic species. - Evidence of successive generations of endemic species - No further active weed control required (beyond that considered necessary at analogue sites).	Monitoring including photography to be conducted by suitably qualified person and reported annually.	Monthly for the first 6 months, then 6 monthly until completion criteria achieved	EA and Rehabilitation Management Plan	Not commenced/ Ongoing
	Rehabilitated areas to be linked to existing and future areas of vegetation where possible to form a network of wildlife corridors	Connectivity between current and future rehabilitated areas is established adjacent to existing and future areas of vegetation where possible. Patches are not to be separated by more than 10 metres where possible.	Monitoring including photography to be conducted by suitably qualified person and reported annually.	Monthly for the first 6 months, then 6 monthly until completion criteria achieved	EA and Rehabilitation Management Plan	Not commenced/ Ongoing
	Rocks of varying sizes are to be spread over rehabilitated areas to provide ground fauna habitat and refuge.	Evidence of varying sized rocks between 20 mm and greater than 200 mm spread over rehabilitated areas. Ground dwelling fauna species of similar diversity to adjacent areas of similar habitat.	Monitoring including photography to be conducted by suitably qualified person and reported annually.	Monthly for the first 6 months, then 6 monthly until completion criteria achieved	EA and Rehabilitation Management Plan	Not commenced/ Ongoing
	The provision of nest boxes for a range of arboreal fauna to be installed during the establishment of final rehabilitation areas	On completion of the rehabilitation, a suitably qualified ecologist determines the requirement on whether nest boxes are required. If nest boxes are required to be installed a nest box management plan will be prepared.	Monitoring including photography to be conducted by suitably qualified person and reported annually.	On installation	EA and Rehabilitation Management Plan	Not commenced/ Ongoing

Objective	Performance Indicator	Completion Criteria	Monitoring Methodology and Responsibility	Monitoring Frequency	Justification /Source	Current Progress and Expected Completion
Domain J - Native Vegetation Conservation Area						
Final landform integrated with surrounding natural landforms as far as is reasonable and feasible, and minimising visual impacts when viewed from surrounding land.	Vegetation self-sustaining.	Monitoring confirms: - Evidence of new growth of endemic species. - Evidence of successive generations of endemic species - No further active weed control required (beyond that considered necessary at analogue sites).	Monitoring including photography to be conducted by suitably qualified person and reported annually.	Monthly for the first 6 months, then 6 monthly until completion criteria achieved	EA and Rehabilitation Management Plan	Not commenced/ Ongoing
	Conservation area to be linked to existing and future areas of vegetation where possible to form a network of wildlife corridors	Connectivity between conservation areas is established adjacent to existing and future areas of vegetation where possible. Patches are not to be separated by more than 10 metres where possible.	Monitoring including photography to be conducted by suitably qualified person and reported annually.	Monthly for the first 6 months, then 6 monthly until completion criteria achieved	EA and Rehabilitation Management Plan	Not commenced/ Ongoing
	The provision of nest boxes for a range of arboreal fauna to be installed during the establishment of final rehabilitation areas	On completion of the rehabilitation, a suitably qualified ecologist determines the requirement on whether nest boxes are required. If nest boxes are required to be installed a nest box management plan will be prepared.	Monitoring including photography to be conducted by suitably qualified person and reported annually.	On installation	EA and Rehabilitation Management Plan	Not commenced/ Ongoing

Objective	Performance Indicator	Completion Criteria	Monitoring Methodology and Responsibility	Monitoring Frequency	Justification /Source	Current Progress and Expected Completion
Phase 6 - Relinquishment						
All Domains						
Relinquishment	Demonstrated compliance with all completion criteria	Outlined above	Completion Report to be prepared by suitably qualified person describing compliance with all criteria.	-	-	Not commenced
Minimise the socio-economic effects of quarry closure	Demonstrated compliance with all completion criteria		Completion Report to be prepared by suitably qualified person describing compliance with all criteria.	-	-	Not commenced

6.10.2 Monitoring Results Compliance and Trends

No rehabilitation monitoring has been undertaken this report period. The backfilling of the eastern portion of the Process Dam (Dam 1) has commenced. The dam has now been divided into 2 water bodies, with the eastern portion undergoing emplacement with VENM material. The western portion remains as the bore water source and storage of surface water for production. More material will be imported to achieve the final landform and revegetation criteria.

6.10.3 Interpretation and Effectiveness of Controls

The perimeter bund walls have been revegetated with grass and shrub species and are stable and not prone to erosion. The perimeter bund walls are providing effective visual screening from the site operations despite the absence of mature trees. The general compliance of the dust and noise monitoring results indicates that this control measure is effective. Internal bunds and topsoil stockpiles are generally well covered with pasture species.

Extraction from the main pit floor has completed and remediation of the pit floor has commenced, with the importation of VENM/ENM.

The 10m buffer on the northern boundary has been reinstated and the bund wall vegetated with native species.

The remaining areas on the site, outside the extraction footprint are well vegetated with pasture species and are stable and protected from erosion impacts.

6.10.4 Measures Proposed for Improvement

During the next report period the following activities will be undertaken towards development of the final landform:

- Monitor and maintain perimeter vegetation.
- Revegetation activities will continue on perimeter bunds.
- Regular weed management.
- Continued emplacement of VENM material within the eastern portion of the Process Dam.

7 Management Targets and Strategies for Future Stages

The targets and strategies for future stages have been outlined in the Environmental Management Plan and each individual sub-plan. They are summarised in the table below.

Table 43. Future Targets

Aspect	Target	Criteria
Air Quality	To receive no reasonably preventable complaints from members of the public or statutory authorities regarding air quality emissions from the site, and for monitoring to show that air quality criteria are being met	Air quality criteria outlined in 6.3.1
Water	To ensure there is no reasonably preventable impact on surface water external to the site or regional groundwater	Water quality criteria outlined in Sections 6.4.1 , 6.5.1 , and 6.7.1 .
Sediment and Erosion	To control erosion on the site to as to reasonable prevent impacts off site	Sediment and erosion criteria are outlined in 6.4
Noise	To receive no reasonably preventable complaints from members of the public or statutory authorities regarding noise or road noise impacts from the site, and for monitoring to show that noise criteria are being met	Noise and road noise criteria are outlined in 6.8.1
Flora and Fauna	Inspections of site flora and fauna to show minimal impacts from operations. Consider the post extraction land use in the management and maintenance of conserved and rehabilitated vegetation.	Performance and completion criteria are detailed in the FFMP
Rehabilitation	To ensure that temporary and permanent rehabilitation activities are undertaken in accordance with the Rehabilitation Plan	Performance and completion criteria are detailed in the LRMP.

8 Opportunities for Improvement

8.1 WATER MANAGEMENT PLAN UPDATES

An update of the Water Management Plan was prepared with consultation from DPI Water and NRAR, and submitted to DPIE in 2022. That plan is yet to be approved.

Schedule 2, Condition 44 of the consent states:

44. The Applicant shall prepare a Water Management Plan for the development to the satisfaction of the Secretary. This plan must be prepared in consultation with DPIE Water by suitably qualified and experienced person/s whose appointment has been approved by the Secretary, and be submitted to the Secretary for approval by 31 December 2016. The plan must be updated on an annual basis in consultation with DPIE Water for three years from the date of approval of Modification 2 and thereafter as agreed with by the Secretary.

NRAR and DPE will be approached as per the above condition to review whether annual updates are required and whether 6 monthly reporting of groundwater depths is still required.

8.2 REHABILITATION CONSERVATION BOND

The bond calculation has been approved and paid.

8.3 INDEPENDENT AUDIT

Table 44. 2023 Independent Audit Recommendations

Opportunity	Actions	Date Achieved
Consider reducing the volume of oil and grease to levels which can be stored within the existing bunded areas	Empty drums removed.	June 2023
	Liaison with supplier to ensure cost effective supply of consumables in smaller volumes.	Ongoing
	Bunded pallets purchased and installed in workshop.	December 2023
Metal parts stored in various locations on site should be sorted and stored in a single location in a neat and tidy manner	Metal and poly pipe removed. Scrap metal recycle bin in use.	April 2023 July 2023

The next Independent Environmental Audit is due on March 26th 2026.

Table 45. *Summary of Proposed Improvements*

Aspect	Improvement
Transport and Traffic	The TMP and Drivers Code of Conduct will continue to be reviewed annually. Records are available on request.
Air Quality	Continue monitoring and management as outlined in AQMP.
Water	Liaise with Water and Planning authorities regarding the further need for WMP annual updates. Continue monitoring and management in accordance with WMP.
Noise	Undertake attended operational and road traffic noise monitoring, including compliance with conditions 47 (a) and (b). Any newly purchased equipment to be tested for Sound Power compliance.
Flora and Fauna	Biodiversity monitoring will be undertaken during the calendar year. Weed control and quarterly reports as per Biodiversity Report schedule will be undertaken as recommended in Section 6.9 . Update Flora and Fauna Management Plan for Mod 4 changes.
Rehabilitation	Monitor and maintain perimeter vegetation. Continue importation and emplacement of VENM material in the eastern portion of the Process Dam. Imported material certification records will be available on request.
Administrative	Environmental Management Strategy and sub-plans to be reviewed and revised following submission of this ARCR. Liaise with DPIE regarding outstanding Management Plan approvals to allow further improvements to the site operations.

References

- Dundon Consulting. (April 2018). *Roberts Rd Maroota Sand Quarry Groundwater Study Report*.
- Dundon Consulting. (July 2018). *Roberts Rd Maroota Sand Quarry Groundwater Management Plan*.
- Dundon Consulting. (July 2018). *Roberts Rd Maroota Sand Quarry Groundwater Monitoring Program*.
- Holmes Air Sciences. (October 1999). *Air Quality Impact Assessment, Proposed Sand Extraction Operations, Roberts Rd Maroota, NSW*.
- Jacobs Group Australia Pty Ltd. (2019). *Roberts Road Quarry Air Quality Impact Assessment for Proposed Modification 4*.
- National Environment Protection Council. (February 2016). *National Environment Protection (Ambient Air) Measure*.
- Nexus Environmental Planning Pty Ltd. (May 2015). *Environmental Assessment Section 75W Mod 3*.
- Nexus Environmental Planning Pty Ltd. (November 1999). *Environmental Impact Statement*.
- Nexus Environmental Planning Pty Ltd. (September 2015). *Environmental Assessment Section 75W Mod 2*.
- NSW Department of Planning and Environment. (March 2016). *DA 267-11-99*.
- NSW EPA. (2015). *Environment Protection Licence 6535*.
- Umwelt (Australia) Pty Limited. (2019). *Robert Road Quarry Modification 4 Statement of Environmental Effects*. Teralba.
- Wilkinson Murray Pty Ltd. (June 2015). *Air Quality Impact Assessment*.

Appendix A

Notice of Modification and draft Consolidated Consent Conditions Mod 4

I, the Minister for Urban Affairs and Planning, under Section 80(1) of the Environmental Planning and Assessment Act, 1979 (the Act), determine the Development Application referred to in Schedule 1 by granting consent to the Application, subject to the conditions set out in Schedule 2.

Andrew Refshauge MP
Minister for Urban Affairs and Planning

Sydney 2000  File No. S98/00772

Application made by: Dr L. S. Martin ('the Applicant').

To: The Minister for Urban Affairs and Planning ("the Minister").

In respect of: Lots 1 and 2 DP 228308, Lot 2 DP 312327, Roberts Road, Maroota, in the Baulkham Hills Local Government Area.

For the following: Extraction and on-site processing of sand, clay and pebble; construction of a bund wall.

Development Application: DA No. 267-11-99 lodged with the Department of Urban Affairs and Planning on 22 November 1999, accompanied by a Environmental Impact Statement prepared by Nexus Environmental Planning Pty Ltd. and dated November 1999.

Determination:

- 1) To ascertain the date upon which the consent becomes effective, refer to Section 83 of the Act.
- 2) To ascertain the date upon which the consent is liable to lapse, refer to Section 95 of the Act.
- 3) Section 97 of the Act confers on an applicant who is dissatisfied with the determination of a consent authority a right of appeal to the Land and Environment Court exercisable within 12 months after receipt of notice.

This instrument includes changes made by DA 267-11-99 Mod 4 in 13 August 2021 (marked purple).

SCHEDULE 2**Conditions of Development Consent****DEFINITIONS**

The Act	<i>Environmental Planning and Assessment Act 1979, as amended</i>
Approval from EPA	means approved in writing by the EPA or as specified as a condition of a licence
BCA	Building Code of Australia
BCD	Biodiversity and Conservation Division within the Department
Calendar year	A period of 12 months from 1 January to 31 December
Conditions of this consent	The conditions set out in this Schedule
Construction	Construction of the bund wall
Council	The Hills Shire Council
DA	Development Application
DCP 500	Baulkham Hills Shire Council Development Control Plan No. 500 – Extractive Industry
Department	Department of Planning, Industry and Environment
DPIE Water	The Water Group within the Department
EIS	Development application DA 267-11-99 and supporting documentation including the Environmental Impact Statement prepared by Nexus Environmental Planning Pty Ltd, dated November 1999, including the attached landscaping plan; the fax from Holmes Air Sciences dated 21 December 1999; the letter from Nexus Environmental Planning Pty Ltd dated 21 December 1999 and attachments; the letter from Woodward-Clyde dated 21 December 1999; the letter from Woodward-Clyde dated 16 December 1999; the letter from Dick Benbow and Associates Pty Ltd dated 5 January 2000 and attachments; the letter from Dick Benbow and Associates Pty Ltd dated 27 January 2000; and the two faxes from Dick Benbow and Associates Pty Ltd dated 17 February 2000 and attachments, except as modified by the report of Dick Benbow and Associates (Report No 10065 Issue 1) dated 26 June 2000
EMP	Environmental Management Plan
ENM	Excavated Natural Material, as defined in the EPAs resource recovery orders and exemptions clauses 91, 92 and 93 of the <i>Protection of the Environment Operations (Waste) Regulation 2014</i> .
EPA	Environment Protection Authority
EPL	Environment Protection Licence under the POEO Act
GTA	General Term of Approval
Heritage NSW	Heritage NSW within the Department of Premier and Cabinet
Incident	An occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance
INP	<i>NSW Industrial Noise Policy (NSW EPA, 2000)</i>
L _{A10} (15 minute)	is the sound pressure level that is exceeded for 10% of the time when measured over a 15 minute period
Laden Trucks	Trucks transporting quarry products from the site and/or trucks transporting VENM/ENM to the site
m AHD	metres Australian Height Datum
MEG	Regional NSW – Mining, Exploration and Geoscience
Minister	NSW Minister for Planning and Public Spaces, or delegate
Modification 1	Modification application 07-00M1 to DA 267-11-99 and supporting SEE titled Amendment to Method of Extraction and Related Acoustic Bund

	Wall, dated 17 July 2000 and prepared by Nexus Environmental Planning Pty Ltd
Modification 2	Modification application DA 267-11-99 Mod 2 and supporting documentation titled: <i>Environmental Assessment Section 75W Modification (2): DA 267-11-99, Hodgson Quarries and Plant Pty Ltd: Roberts Road: Maroota</i> (Volumes 1 and 2), dated 23 September 2015 and prepared by Nexus Environmental Planning Pty Ltd; Response to Submissions <i>75W Modification (2): DA 267-11-99, Hodgson Quarries and Plant Pty Ltd: Roberts Road: Maroota</i> , dated 3 December 2015 and prepared by Nexus Environmental Planning Pty Ltd; and email correspondence from Nexus Environmental Planning Pty Ltd to the Department, dated 12 February 2016, 16 February 2016 and 24 February
Modification 3	Modification application DA 267-11-99 Mod 3 and supporting documentation titled <i>Environmental Assessment Section 75W Modification (3): DA 267-11-99, Hodgson Quarry Products Pty Ltd: Roberts Road: Maroota</i> , dated 17 May 2015 and prepared by Nexus Environmental Planning Pty Ltd
Modification 4	Modification application DA 267-11-99 MOD 4 and Statement of Environmental Effects titled: <i>Roberts Road Quarry Modification 4</i> , dated December 2019 prepared by Umwelt Environmental Consulting and Submissions Report titled: <i>Roberts Road Quarry Modification 4, Response to Submissions</i> , dated March 2020 prepared by Umwelt Environmental Consulting, and additional information supporting the Response to Submissions, including: • Revised noise assessment titled: <i>Noise Impact Assessment Rev 1</i>, dated May 2020 prepared by Umwelt Environmental Consulting; • Letter from Umwelt Environmental Consulting, dated 20 May 2020; and • Letter from Benbow Environmental, dated 10 September 2020.
Non-compliance	An occurrence, set of circumstances or development that is a breach of this consent
PCA	Principal Certifying Authority
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
Process Water Dam	The process water dam located in the north-eastern corner of the site
Quarrying products	Includes all saleable quarry products, but excludes tailings and other wastes and rehabilitation material
Secretary	Planning Secretary under the EP&A Act, or nominee
Subject Site	Lots 1 and 2 DP 228308, Lot 2 DP 312327, Roberts Road, Maroota, in the Baulkham Hills Local Government Area
TfNSW	Transport for NSW
VENM	Virgin Excavated Natural Material, as defined in the POEO Act
Waste	Has the same meaning as the definition of the term in the Dictionary to the POEO Act
Wet weather high groundwater level	The rolling average of all recorded groundwater level measurements at any monitoring location on the site, as first recorded following any rainfall event of at least 50 mm over any 24-hour period, and as contour mapped using this data

INTEGRATED DEVELOPMENT

Integrated development is development (not being complying development) that, in order for it to be carried out, requires development consent and one or more of the approvals set out in the Act. The subject proposal is integrated development, as it requires development consent and the approval of the Environment Protection Authority under the *Protection of the Environment Operations Act 1997* and, the approval of the Department of Land and Water Conservation under Parts 2 and 5 of the *Water Act 1912*. The general terms of approval of both the EPA and the [DPIE Water](#) therefore form part of this Consent.

GENERAL

Obligation to Prevent and Minimise Harm to the Environment

1. There is an obligation on the Applicant to prevent and minimise harm to the environment throughout the life of the project. This requires that all practicable measures are to be taken to prevent and minimise harm that may result from the construction, operation and, where relevant, the decommissioning of the development.

Adherence to Terms of DA and EIS

2. The Applicant shall:
 - (a) carry out the development generally in accordance with the EIS, Modification 1, Modification 2, Modification 3 and Modification 4; and
 - (b) comply with the conditions of this consent.

If there is any inconsistency between the documents in Condition 2(a), the most recent documents shall prevail to the extent of the inconsistency. The conditions of this consent shall prevail over documents in Condition 2(a) to the extent of any inconsistency.

Compliance

3. The Applicant shall comply with all reasonable requirements of the [Secretary](#) in respect of the implementation of the Conditions of this Consent, within such time as the [Secretary](#) agrees. The [Secretary](#) may order the Applicant to cease work until non-compliance has been addressed to the [Secretary's](#) satisfaction.
4. The Applicant shall ensure that all contractors and sub-contractors are aware of, and comply with, the Conditions of this Consent.
5. The Applicant shall comply with all relevant conditions prescribed in Part 7 of the *Environmental Planning and Assessment Regulation 1994*, as required by Section 80A (11) of the Act.
6. The Applicant SHALL submit a Conditions Compliance Report to the [Secretary](#) prior to the commencement of extraction in areas that are not currently subject to extraction. Subsequent reports will be submitted annually for the first three years of extraction in areas not currently subject to extraction. Further reports SHALL be submitted as required by the [Secretary](#).

To enable ready comparison with the EIS's predictions, diagrams and tables, the Conditions Compliance Reports shall include, but not be limited to, the following matters:

- (a) a compliance audit of the performance of the project against conditions of Consent and statutory approvals;
- (b) a review of the effectiveness of the environmental management of the development;
- (c) the results of environmental monitoring required under this Consent or other approvals, including interpretations and discussion by a suitably qualified person;

- (d) a listing of any variations obtained to approvals applicable to the DA since the last report;
 - (e) a record of all complaints and the actions taken to mitigate all such complaints;
 - (f) a report detailing the rehabilitation measures undertaken since the last report; and
 - (g) environmental management targets and strategies for stages of the development yet to be completed.
7. The [Secretary](#) may, after considering a Conditions Compliance Report, notify the Applicant of any reasonable requirements for compliance with this Consent. The Applicant SHALL comply with those requirements within such time as the [Secretary](#) may direct.

Note: The Applicant is obliged to ensure that all statutory requirements, including all relevant legislation, Regulations, Australian Standards, Codes, Guidelines and Notices, Conditions and Directions of the Councils and relevant government agencies are met and approvals obtained.

Limits on Approval

8. No extraction shall commence in areas that are not currently subject to extraction, until the Applicant has:
- (a) **constructed the bund walls at the corner of Roberts Road and Old Northern Road;**
 - (b) submitted the Conditions Compliance Report required under Condition 6; and
 - (c) obtained all licences necessary for the commencement of extraction.
9. The duration of extraction under this Consent is **until 31 May 2030**. The Applicant shall ensure that rehabilitation of all disturbed areas is completed within six months of completion of extraction.
- 9A. The Applicant must not:
- (a) process or dispatch more than 480,000 tonnes of quarrying products at the site in any calendar year;
 - (b) receive more than 320,000 tonnes of VENM and ENM (in total) at the site in any calendar year;
 - (c) import more than 3 million tonnes of VENM and ENM to the site; and
 - (d) import VENM and ENM beyond 31 May 2030.

Complaints Procedures

10. Prior to commencement of construction, the Applicant shall:
- (a) publicise a telephone number on which complaints about the subject development can be registered during the hours of operation in Condition 16; and
 - (b) publicise a postal address where written complaints may be lodged.
- The telephone number and postal address shall be displayed on the property where it can be read from a public road, for the duration of the development.
11. The Applicant shall record details of all complaints received and actions taken in response to complaints in an up-to-date log book. The log book shall be made available for inspection upon request by the [Secretary](#), the EPA or the Council; and a summary of complaints received shall be included in the Conditions Compliance Reports under Condition 6.
12. The Applicant shall ensure that an initial response to complaints is provided to the complainant within 24 hours of receipt. The Applicant shall then:
- (a) investigate the concerns raised by the complainant and undertake all reasonable attempts to determine the cause of concern; and
 - (b) if adverse impacts are identified, undertake all practicable measures to modify the activity which may be causing the impacts.
13. If the Applicant's response does not address the complaint to the satisfaction of the complainant within six weeks, the Applicant shall inform the [Secretary](#) and take any action as directed by the [Secretary](#).

This may include a requirement to carry out independent investigations of noise and/or dust at the cost of the Applicant, in accordance with Condition 14.

14. If the **Secretary** is satisfied that an independent investigation is required, the Applicant shall:
- appoint a qualified independent person or team to plan and implement an investigation to qualify the impact and determine the sources of the impact; and
 - bear the cost of the independent investigation and make available plans, programs and other information necessary for the independent person to form an appreciation of the past, present and future works and their effects on dust and/or noise emissions.

This investigation is to be carried out in accordance with a documented Plan. The Plan shall be designed and implemented to measure and/or compute (with appropriate calibration by measurement) the relevant noise and/or dust levels at the complainant's property, that are emitted by the development; and specify a monitoring period and reporting schedule.

The independent person or team, the Plan and the timing of its implementation, shall be approved by the **Secretary**. The independent person or team shall report to the **Secretary** and the Applicant.

Further independent investigations shall cease if the **Secretary** is satisfied that the relevant levels are not being exceeded and are unlikely to be exceeded in the future.

Dispute Resolution

15. In the event that the Applicant, Council, the PCA, or a government authority other than the Department, cannot agree on the specification or requirements applicable under this Consent, the matter shall be referred by either party to the **Secretary** or, if not resolved, to the Minister, whose determination of the disagreement shall be final and binding on the parties.

HOURS OF OPERATION

16. Unless prior written approval of the EPA is obtained, the hours of operation are:
- construction: 7.00am to 6.00pm Monday to Friday
 - extraction and processing of material: 7.00am to 6.00pm, Monday to Friday and 7.00am to 1.00pm on Saturdays
 - vehicle loading: 6.00am to 6.00pm, Monday to Friday and 6.00am to 1.00pm on Saturdays.
- No works shall be undertaken on Sundays or Public Holidays.

These restrictions do not apply to routine maintenance work, such as the repair of machinery, provided the work does not result in exceedance of the noise limits in Condition 47.

DEPTH OF EXTRACTION

17. The Applicant shall ensure that extraction does not take place below a level 2 metres above the wet weather high groundwater level of the regional aquifer, as measured and mapped on the site (see Conditions 39(d) and 44).

PRODUCTION DATA

- 17A. Each year the Applicant must provide MEG with annual quarry production data, covering a full calendar year, by no later than 30 January the following calendar year.
- 17B. The data must be provided using the relevant standard form and a copy of the data must be included in the Annual Review (required under condition 66).

ENVIRONMENTAL MANAGEMENT PLAN

18. The Applicant shall prepare a Construction Environmental Management Plan (EMP) to the satisfaction of the [Secretary](#) prior to commencement of construction. The Construction EMP shall contain appropriate measures which demonstrate how the environmental objectives for the project will be achieved, including objectives stated in this Consent; and contain a monitoring, reporting and response program.

[The Applicant shall implement the approved management plan as approved from time to time by the Secretary.](#)

19. The Applicant shall prepare an Operational Environmental Management Plan (EMP) in consultation with the relevant authorities and to the satisfaction of the [Secretary](#), prior to the commencement of extraction under this Consent. The EMP shall incorporate and integrate environmental management for the existing extraction areas, as well as the areas approved under this Consent.

20. The Operational EMP shall include, but not be limited to:

- (a) environmental objectives for the site;
- (b) the Air Quality Management Plan (Condition 29);
- (c) the [Water Management Plan \(Condition 42\)](#);
- (d) the Noise Management Plan (Condition 46);
- (e) the Road Noise Management Plan (Condition 48);
- (f) [the Traffic Management Plan \(Condition 50A\)](#);
- (g) [the Flora and Fauna Management Plan \(Condition 55\)](#); and
- (h) [the Rehabilitation Plan \(Condition 58\)](#).

21. The Applicant shall make copies of both EMPs available to Council, EPA and [DPIE Water](#) within 14 days of approval by the [Secretary](#). The Applicant shall also make a current copy of the EMPs available for inspection by the public or these agencies, for the duration of the Consent.

22. The Applicant shall, in consultation with the [Secretary](#), the EPA and the [DPIE Water](#), update the Operational EMP from time to time in order to ensure continuing compliance with the Conditions of this Consent and all relevant approvals and licenses. The EMP shall be responsible for determining if any significant changes to the Operational EMP should be referred to the [Secretary](#) for approval.

[The Applicant shall implement the approved management plan as approved from time to time by the Secretary.](#)

23. [Deleted.](#)

24. [Deleted.](#)

25. [Deleted.](#)

Importation of VENM and ENM

26. The applicant must:

- (a) ensure only verified VENM and ENM is received at the site
- (b) collect data on the VENM and ENM received including detail of the origin, date, and quantity received; and
- (c) include a copy of this data in the Annual Review.

WASTE

27. No other materials classified as waste under the EPA's *Waste Classification Guidelines 2009* (or its latest version) may be received or processed on the site, except as expressly permitted in an applicable EPL, specific resource recovery order or exemption under the *Protection of the Environment Operations (Waste) Regulation 2014*.

AIR QUALITY

Air Quality Criteria

28. The Applicant must ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the development do not cause exceedances of the criteria in
- 29.
30. TABLE at any residence on privately-owned land.

Table 1: Air quality criteria

Pollutant	Averaging period	Criterion
Particulate matter < 10 µm (PM ₁₀)	Annual	^{a, c} 25 µg/m ³
	24 hour	^b 50 µg/m ³
Particulate matter < 2.5 µm (PM _{2.5})	Annual	^{a, c} 8 µg/m ³
	24 hour	^b 25 µg/m ³
Total suspended particulate (TSP) matter	Annual	^{a, c} 90 µg/m ³
^d Deposited dust	Annual	^b 2 g/m ² /month ^a 4 g/m ² /month

Notes:

^a Total impact (i.e. incremental increase in concentrations due to the development plus background concentrations due to all other sources).

^b Incremental impact (i.e. incremental increase in concentrations due to the development on its own).

^c Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fire incidents or any other activity agreed by the Secretary.

^d Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: *Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method*.

- 28A. The air quality criteria in

A1.

Table do not apply if the Applicant has an agreement with the owner/s of the relevant residence or infrastructure to exceed the air quality criteria, and the Applicant has advised the Department in writing of the terms of this agreement.

Air Quality Management

31. The Applicant shall prepare an Air Quality Management Plan as part of the EMP. The Air Quality Management Plan shall:
- identify existing and potential sources of dust deposition, TSP and fine particulates (PM₁₀ and PM_{2.5}) and specify appropriate monitoring intervals and locations. The purpose of the monitoring is to evaluate, assess and report on these emissions and the ambient impacts with the objective of understanding the development's contribution to levels of dust deposition, TSP and fine particulates in ambient air around the site;

- (b) provide a monitoring plan having regard to local meteorology and the relevant Australian Standards, identifying the methodologies to be used, including justification for monitoring intervals, weather conditions, seasonal variations, selecting locations, periods and times of measurements;
- (c) provide details of dust suppression measures for all sources of dust from the development, including a planting and watering regime to ensure that areas of the site which are exposed and active at any one time are minimised to the greatest extent practicable. The use of a polymer in the water to minimise dust impacts shall be investigated as part of this Plan;
- (d) provide details of actions to ameliorate impacts if they exceed the relevant criteria; and
- (e) provide the design of the reactive management system intended to reduce the day-to-day impacts of dust and fine particulates due to the development.

The Applicant shall implement the approved management plan as approved from time to time by the Secretary.

- 29A. The Applicant must commission an expert review of air quality monitoring at the site. This review must:
- (a) be undertaken by a suitably qualified and experienced person(s) whose appointment has been endorsed by the Secretary;
 - (b) review the accuracy of air quality monitoring at the site over a 12 month period, in general accordance with the *Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales* (DEC, 2007) and with a particular focus on PM_{2.5} monitoring;
 - (c) provide recommendations (where required) to improve the accuracy of air quality monitoring at the site; and
 - (d) be undertaken in consultation with the EPA.

- 29B. A copy of the expert review report along with a timetable for implementing any recommendations arising from the review required under condition 29A of this Schedule, must be submitted by 1 October 2022, or as otherwise agreed by the Planning Secretary.

The Applicant must implement the recommendations of the expert review to the satisfaction of the Secretary.

- 32. Activities occurring at the premises must be carried out in a manner that will minimise emissions of dust from the premises.¹
- 33. The Applicant shall cease offending work at such times when the operations are resulting in visible dust emissions blowing in a direction so as to cross onto public roads or lands not owned by the Applicant.
- 34. The Applicant shall install, operate and maintain a sprinkler system to adequately water all cleared areas and stockpiles so as to minimise dust emissions to acceptable levels.
- 35. The Applicant shall ensure that all vehicular movements on unsealed areas are restricted to specific routes and that all vehicles within the subject site keep to a speed limit of 30 km/h.
- 36. The Applicant shall ensure that trucks are covered when entering and leaving the premises carrying loads of potentially dust generating material.

Air Quality Monitoring

- 37. All monitoring equipment is to be installed and operational prior to commencement of construction.
- 38. Operation of dust deposition gauges and monitoring must be carried out in accordance with;

¹ Environment Protection Authority General Term of Approval

- (a) Australian Standard 3580.10. 01 (1991) Particulates – Deposited Matter – Gravimetric Method. Approved method AM-19 referred to in *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*, December 1999.
 - (b) Australian Standard 2724.3 (1984) Particulate Matter – Determination of Total Suspended Particulates (TSP) - High Volume Sampler Gravimetric Method. Approved method AM 15 referred to in *Approved Methods for the sampling and Analysis of Air Pollutants in New South Wales*, December 1999.
 - (c) Australian Standard 3580.9.6 (1990) for Suspended Particulate Matter – PM10 High Volume Sampler with Size Selective Inlet-Gravimetric Method. Approved method AM-18 referred to in *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*, December 1999.²
39. A meteorological station measuring wind speed and direction must be installed and operated by the Applicant at a site determined in consultation with the EPA.³

SOIL AND WATER

Note: The Applicant is required to obtain the necessary water licences for the development under the Water Act 1912 and/or Water Management Act 2000.

Limits on Extraction

40. The Applicant shall not extract:
- (a) below a depth of 182 m AHD in the footprint of the Process Water Dam, if not already extracted as at the date of Modification 2; and
 - (b) below a depth of 186.1 m AHD in all other areas of the site;
- unless in accordance with Condition 17, and following written notification to the Secretary and DPIE Water.

Groundwater Study and Remediation Works

41. Within six weeks of the date of approval of Modification 2, the Applicant shall commission a comprehensive groundwater study of the site. This study must:
- (a) be prepared by suitably qualified and experienced person/s whose appointment has been endorsed by the Secretary and DPIE Water;
 - (b) consult with DPIE Water;
 - (c) examine all existing records of groundwater levels at the site;
 - (d) develop an interim contour map of the wet weather high groundwater level of the regional aquifer, based on all available records (see also Condition 44); and
 - (e) provide advice and recommendations on the Groundwater Monitoring Program as set out in Condition 43.
42. Unless otherwise agreed by the Secretary, the Applicant shall submit a report of the study to the Secretary and DPIE Water within six months of commissioning the study. The report must be accompanied by a Groundwater Management Improvement Program, based on the study's findings and recommendations which includes a program of proposed timeframes for implementation. Should the Applicant propose not to implement any of the report's recommendations, it must provide detailed justification to this effect.

² Environment Protection Authority General Term of Approval

³ Environment Protection Authority General Term of Approval

The Groundwater Management Improvement Program must be prepared and implemented to the satisfaction of the Secretary. Progress against the Program shall be reported through Annual Reviews and considered as part of the Independent Environmental Audit.

43. Within six months of the submission of the Groundwater Study and accompanying documents (see Conditions 39 and 40), the Applicant must infill any area of the site identified as being below the wet weather high groundwater level to at least that level as mapped (see Condition 39(d)).

Within six months of any update of the groundwater level contour map, the Applicant must infill any area of the site identified as being below the wet weather high groundwater level to at least that level as mapped (see Condition 44).

Water Management Plan

44. The Applicant shall prepare a Water Management Plan for the development to the satisfaction of the Secretary. This plan must be prepared in consultation with **DPIE Water** by suitably qualified and experienced person/s whose appointment has been approved by the Secretary, and be submitted to the Secretary for approval by 31 December 2016. The plan must be updated on an annual basis in consultation with **DPIE Water** for three years from the date of approval of Modification 2 and thereafter as agreed with by the Secretary.

In addition to the standard requirements for management plans (see Condition 65), this plan must include a:

- (a) Site Water Balance that:
 - includes details of:
 - sources and security of water supply, including contingency planning;
 - water use on site;
 - water management on site, including groundwater inflows to the quarry voids and site discharges; and
 - audit and reporting procedures, including comparisons of the site water balance each calendar year; and
 - describes the measures that would be implemented to minimise clean water use on site and maximise recycling opportunities;
- (b) Surface Water Management Plan, that includes:
 - a detailed description of the surface water management system on site, including the:
 - clean water diversion systems;
 - erosion and sediment controls;
 - effluent irrigation system;
 - water transfers from the extraction areas;
 - water storages; and
 - discharge points;
 - design objectives and performance criteria for proposed:
 - erosion and sediment control structures;
 - water storages, including quarry voids;
 - site discharges; and
 - control of water pollution from rehabilitated areas of the site;
 - performance criteria, including trigger levels for investigating any potentially adverse impacts for surface water quality;
 - a program to monitor:
 - the effectiveness of the water management system;
 - site discharge water quality; and
 - surface water level and quality in the Process Water Dam, including the quantification of rainfall inflow, groundwater inflow and evaporation;

- a plan to respond to any exceedances of the performance criteria, and mitigate and/or offset any adverse surface water impacts of the project;
 - long term water quality management objectives and the measures to achieve these objectives;
 - a plan that ensures surface stormwater runoff from the disturbed areas is directed to the sedimentation dam(s);
 - a plan that ensures tailgate drainage does not discharge into or onto any adjoining public or Crown road, any other persons land, any Crown land, any river, creek or watercourse, any groundwater aquifer, any native vegetation as described under the *Native Vegetation Conservation Act 1997* and any wetlands of environmental significance;
 - a detailed description of design and construction criteria for the Process Water Dam based on a feasibility study of:
 - capacity to construct multiple cells within the overall dam footprint (ie a two stage or three stage dam);
 - whether the dam floor and walls are able to be effectively lined with compacted clay (especially for multiple cells);
 - whether effective hydraulic separation can be achieved between such cells;
 - rehabilitating such cells to create a single dam within the final landform; and
 - the appropriateness of diverting runoff received from off-site around the dam;
 - a strategy for the decommissioning of water management structures, including storage, sedimentation and leachate dams once extraction is complete; and
 - audit and reporting procedures, including comparisons of the monitoring results each calendar year and quarterly reporting of surface water monitoring results;
- (c) Groundwater Management Plan that takes into account the *Web-based Reporting Guideline* (DPE 2015) and *Groundwater Monitoring and Modelling Plans – Information for Prospective Mining and Petroleum Exploration Activities* (DPI 2014), and includes:
- detailed baseline data on groundwater yield and quality in groundwater bores on privately-owned land, that could be affected by the project;
 - a program to undertake surveyed probe testing of all extracted areas where clay fines have been deposited to:
 - accurately determine the depth of extraction and depth of clay fines;
 - identify any ongoing intersection or other interaction between clay fines and the regional groundwater aquifer;
 - identify any geotechnical characteristics of the emplaced clay fines which may pose risks to workplace safety or implementation of the process water dam design or the final landform; and
 - identify measures which can be successfully used in rehabilitating these areas;
 - a program to monitor potential groundwater quality impacts to the regional aquifer from receiving off-site runoff water in the Process Water Dam;
 - groundwater assessment criteria, including trigger levels for investigating any potentially adverse groundwater impacts, in accordance with the *NSW Aquifer Interference Policy*;
 - a program to monitor:
 - the impacts of the project on:
 - groundwater inflows to water storages;
 - any groundwater bores on privately-owned land that could be affected by the project; and
 - seepage from water storages or backfilled voids on site;
 - a plan to respond to any exceedances of the groundwater assessment criteria;
 - emergency contingency plans for implementation in the event that the groundwater is encountered during excavation; and
 - audit and reporting procedures, including comparisons of the monitoring results each calendar year and quarterly reporting of groundwater monitoring results,

The Applicant shall implement the approved management plan as approved from time to time by the Secretary.

Groundwater Monitoring

45. The Applicant shall prepare a Groundwater Monitoring Program for the development to the satisfaction of the Secretary. This program must:
 - (a) be prepared in consultation with **DPIE Water** and be submitted to the Secretary for approval within four months of the date of approval of Modification 2;
 - (b) include proposed construction of a network of at least five active monitoring bores around the south-eastern, southern, western and north-western boundaries of the extraction area (but outside of the overall extraction footprint) in proximity to extraction Phases 1 to 6 as identified in Modification 2, to collect continuous groundwater level monitoring data from the regional aquifer;
 - (c) include proposed construction to deepen (or replace) PT84MW1 in order that a bore in that general location monitors the regional aquifer; and
 - (d) include proposed construction of active monitoring bores within the largest components of at least the two forthcoming extraction Phases (on a rolling basis), each to collect at least 2 years of continuous baseline groundwater monitoring data prior to extraction commencing with that Phase.
46. The results of the Groundwater Monitoring Program shall be reported the Department and **DPIE Water**, using contour plans depicting the surface topography, updated contour maps of the wet weather high groundwater level of the regional aquifer and proposed depth of extraction for each extraction Phase. Reporting is to occur on a six monthly basis for the duration of extractive operations, and throughout rehabilitation of the site, unless otherwise agreed with the Secretary.

The Applicant shall implement the Groundwater Monitoring Program as approved from time to time by the Secretary.

Process Water Dam Design and Construction

47. The Applicant must ensure that the Process Water Dam is designed and constructed in a manner that satisfies the design and construction criteria for the Process Water Dam as developed under the Surface Water Management Plan (see condition 42(b) above).

NOISE

Noise Management Plan

48. The Applicant shall prepare a Noise Management Plan as part of the EMP.

The Noise Management Plan shall:

- (a) identify existing and potential noise sources and their relative contribution to noise impacts from the development;
- (b) specify appropriate intervals for noise monitoring to evaluate, assess and report noise emission levels due to construction and normal operations of the development under prevailing weather conditions;
- (c) outline the methodologies to be used, including justification for monitoring intervals, weather conditions, seasonal variations, selecting locations, periods and times of measurements, the design of any noise modelling or other studies, including the means for determining the noise levels emitted by the development;
- (d) specify measures to be taken to document any higher level of impacts or patterns of temperature inversions, and detail actions to quantify and ameliorate enhanced impacts if they occur;

- (e) provide details of noise amelioration measures, including measures to be used to reduce the impact of intermittent, low frequency and tonal noise (including truck reversing alarms) and reactive management responses for particular noise sources; and
- (f) contingency measures to be implemented should noise complaints be received.
- (g) provision for the notification of adjoining property owners of the commencement and duration of works adjoining the boundary;
- (h) construction of temporary noise shielding to residences affected by short-term noise impacts, including the bund recommended under Modification 2, and include an assessment of the effectiveness of this measure in reducing noise levels; and
- (i) include a noise reduction strategy for typical operations to ensure the noise levels from these operations do not exceed the noise criteria specified in Condition 47.

The Applicant shall implement the approved management plan as approved from time to time by the Secretary.

Noise Operating Conditions

49. The Applicant must ensure that the noise generated by the development does not exceed the criteria in Table 1 at any residence on privately-owned land.

Table 1: Operational noise criteria dB(A)

Receiver	Day (7am-6pm) Monday to Saturday <i>L_{Aeq} (15 min)</i>	6am-7am Monday to Saturday <i>L_{A1} (1 min)</i>	6am-7am Monday to Saturday <i>L_{Aeq} (15 min)</i>
Receiver B	44	50	40
All other receivers	43	50	40

^aThe Noise Assessment Locations referred to in Table 1 are shown in Appendix 2

Noise generated by the development is to be measured in accordance with the relevant requirements of the *NSW Industrial Noise Policy* (as may be updated or replaced from time-to-time).

However, these criteria do not apply if the Applicant has an agreement with the owner/s of the relevant residence or land to generate higher noise levels, and the Applicant has advised the Department in writing of the terms of this agreement.”

- 47(a) The excavator to be used is to be fitted with acoustic mufflers to achieve a noise level of approximately 76dB(A) when measured at 7 metres.
- 47(b) The on-site generator is to be fitted with an acoustic enclosure to ensure that noise levels less than 44dB(A) at 30m are achieved.
- 47(c) A noise compliance investigation is to undertaken within one month of the installation of the equipment to demonstrate compliance with the noise level limits stated in Conditions 47(a) and 47(b). The results of the compliance investigation are to be provided for the approval of the Secretary within 14 days of the completion of the investigations.
- 47(d) The Applicant must ensure works associated with atypical operations, as described in Modification 2, only occur:
 - (a) for a maximum of 24 days in a year, and only between 8 am to 5 pm on those days, Monday to Saturday;
 - (b) after an investigation of options for avoiding multiple atypical operations at any one time so as to limit noise levels at affected receptors, and the outcomes of this investigation are detailed in the Noise Management Plan; and

- (c) at least 24 hours after notifying potentially affected receptors, with such notification to include information on the duration and extent of works, the likely noise to be experienced, and a contact telephone number.

TRAFFIC AND TRANSPORT

Road Noise Management Plan

50. The Applicant shall ensure that traffic noise from the development does not exceed (L Aeq(1 hr)) 55 dB(A) between 7 am and 10 pm and 50 dB(A) between 10 pm and 7 am at any affected residence under adverse weather conditions. Where ambient Leq levels already exceed these criteria, the Applicant shall ensure that traffic noise from the development does not result in an increase of more than 2 dB(A).

Note: Adverse weather conditions means in the presence of winds up to 3 metres per second and/or temperature inversions of up to 4 degrees Centigrade per 100 metres.

51. The Applicant shall prepare a Road Noise Management Plan as part of the EMP. The Plan shall document measures to be taken to meet the criteria, including a monitoring, reporting and response program; and methods for educating drivers in the reduction of road noise impacts.

The Applicant shall implement the approved management plan as approved from time to time by the Secretary.

Truck movements

52. The Applicant must ensure that truck movements associated with the development do not exceed 70 outbound and 70 inbound per day and does not exceed 10 outbound and 10 inbound per hour.

Traffic Management Plan

- 50A. The Applicant must prepare a Traffic Management Plan that must:

- (a) be prepared by suitably qualified and experienced person/s whose appointment has been endorsed by the Secretary;
- (b) be prepared in consultation with TfNSW and Council;
- (c) include a Drivers' Code of Conduct that contains procedures to ensure that drivers:
 - (i) adhere to posted speed limits or other required travelling speeds;
 - (ii) adhere to designated transport routes;
 - (iii) implement safe and quiet driving practices; and
 - (iv) minimise potential conflict with school buses.
- (d) describe the measures to be put in place to ensure compliance with the Drivers' Code of Conduct; and
- (e) propose measures to minimise the transmission of dust and tracking of material onto the surface of public roads from vehicles exiting the site.

The Applicant must submit the Traffic Management Plan as approved by the Secretary by the 31 October 2021, or otherwise agreed by the Secretary. The Applicant must implement the Traffic Management Plan as approved by the Secretary.

Section 94A Contributions

53. The Applicant shall pay to Council a contribution under Section 94A of the Act at the rate of \$0.65 per tonne of all extracted/ processed material transported from the subject site.

The following conditions apply to the payment of this contribution:

- (A) The contribution will be calculated and paid monthly from the date of this Consent;
- (b) The contribution will be indexed and adjusted annually as from the date of Consent, in accordance with the Consumer Price Index. This adjustment will be applicable to each financial year for the duration of this Consent and shall take effect from and including July each year, commencing 1 July 2000;
- (c) On or before the fourteenth day of each month for the duration of the Consent, the Applicant shall deliver to Council weighbridge records showing the true quantities of extracted/processed material transported from the property during the immediately preceding month and the Council will then, as soon as it can conveniently do so, issue an invoice to the Applicant, to be paid within fourteen days;
- (d) The Council has the right to inspect and have the original records relating to any extraction/processing material, including numbers and types of laden trucks, trailers and load quantities transported from the property audited, at any time when Council makes a written request to do so;
- (e) The Council will pay all the said contribution payments into a specially identified account for payment towards the rehabilitation, restoration, repair and/or maintenance of Old Northern and Wisemans Ferry Roads within the Baulkham Hills Shire boundary.

Note: This condition has been imposed in accordance with Council's Contributions Plan No. 6 – Extractive Industries. A copy of this plan may be inspected at the Customer Service Centre, Council's Administration Complex, corner of Carrington and Showground Roads, Castle Hill, between the hours of 8:30 am and 4:30 pm weekdays.

FLORA AND FAUNA

54. *Deleted.*

- 55. The Applicant shall not clear the strip of remnant vegetation along the southern fence line (Old Northern Road) and the vegetation to the north of the site entrance (Roberts Road) containing Blue Mountains Mahogany (*Eucalyptus notabilis*). This area shall be fenced off to prevent vehicles entering the area.
- 56. *In construction of the bund walls at the corner of Roberts Road and Old Northern Road, the Applicant shall minimise disturbance to existing native vegetation.*

Flora and Fauna Management Plan

- 57. The Applicant shall prepare a Flora and Fauna Management Plan as part of the EMP. The Plan shall be prepared in consultation with National Parks and Wildlife Service and Council, and shall:
 - (a) describe the characteristics and location of species, populations and communities that the proposal may impact upon;
 - (b) consider the feasibility and practicality of salvaging trees removed for the development for relocation to conserved or rehabilitated areas, for the purposes of reconstructing habitat for ground fauna
 - (c) contain a program for the active management and maintenance of all conserved and rehabilitated vegetation (as detailed in the EIS and required under this Consent) including consideration of:
 - post-extraction land use objectives for the site;
 - utilisation of local endemic species or species naturally occurring in the Maroota area;
 - planting around the conservation area to further buffer this area and enhance its long term viability as a bushland ecosystem;

- connection of existing areas and future areas of revegetation to form a network of wildlife corridors throughout site and to adjoining lands to facilitate species recruitment through natural immigration;
 - provision of rocks of varying sizes to provide refuge and basking sites for herpetofauna;
 - fencing of revegetated areas to prohibit grazing by stock; and
 - provision of artificial nest boxes for a range of arboreal fauna.
- (d) mitigation measures to be implemented should operations compromise the significant flora and fauna communities identified in the EIS;
- (e) an ongoing monitoring program of the existing and proposed revegetated areas to assess their floristical structure and diversity, resilience and robustness to disturbance, and fauna species diversity. The information obtained from the monitoring shall be used to guide future revegetation and management efforts; and
- (f) include detailed performance and completion criteria for evaluating the performance of the flora and fauna management measures and rehabilitation of the site, including triggers for any necessary remedial action.
58. The Applicant shall maintain the revegetated areas for the duration of the Consent. Maintenance may include:
- replanting failed or unsatisfactory areas
 - repairing erosion problems
 - fire management – fire suppression or fire encouragement
 - pest and weed control
 - control of feral animal populations
 - maintain and repair fencing
 - fertiliser application
 - watering plants in drier areas, especially in the establishment phase
 - application of lime or gypsum to control pH and improve soil structure.

HERITAGE

59. If, during the development, the Applicant becomes aware of any heritage or archaeological material, all work likely to affect the material shall cease immediately and the relevant authorities consulted about an appropriate course of action prior to recommencement of work. The relevant authorities may include [Heritage NSW](#), and the Local Aboriginal Land Councils. Any necessary permits or consents shall be obtained and complied with prior to recommencement of work.

LANDSCAPE AND REHABILITATION

Rehabilitation Objectives

60. The Applicant shall rehabilitate the site in a manner that is generally consistent with the final landform designs in Appendix 1, to the satisfaction of the Secretary. All rehabilitation must comply with the objectives in Table 1:

Table 1: Rehabilitation Objectives

Feature	Objective
Site (as a whole)	• Safe, stable and non-polluting • Final landform integrated with surrounding natural landforms as far as is reasonable and feasible, and minimising visual impacts when viewed from surrounding land •
Surface Infrastructure	• Decommissioned and removed, unless the Secretary agrees otherwise

Quarry Pit Floor	• Landscaped and revegetated using improved pasture species, native trees and understorey species
Final Void	• Minimise the height and slope of batters • Minimise the drainage catchment
Community	• Ensure public safety • Minimise the adverse socio-economic effects of quarry closure

Progressive Rehabilitation

59. The Applicant shall rehabilitate the site progressively, that is, as soon as reasonably practicable following disturbance. All reasonable and feasible measures must be taken to minimise the total area exposed for dust generation at any time. Interim stabilisation measures must be implemented where reasonable and feasible to control dust emissions in disturbed areas that are not active and which are not ready for final rehabilitation.

Note: It is accepted that parts of the site that are progressively rehabilitated may be subject to further disturbance in future.

Landscape and Rehabilitation Management Plan

60. The Applicant shall prepare a Landscape and Rehabilitation Management Plan for the development to the satisfaction of the Secretary. This plan must:
- be submitted to the Secretary for approval by 30 June 2017, unless otherwise agreed by the Secretary;
 - provide details of the conceptual final landform and associated land uses for the site;
 - describe the short, medium and long-term measures that would be implemented to ensure compliance with the rehabilitation objectives and progressive rehabilitation obligations in this consent;
 - include a detailed description of the measures that would be implemented over the next 3 years (to be updated for each 3 year period following the 3 years covered by the initial approval of the plan) including the procedures to be implemented for:
 - maximising the salvage of environmental resources within the approved disturbance area for beneficial reuse;
 - protecting vegetation and fauna habitat outside the approved disturbance area on-site;
 - minimising the impacts on native fauna;
 - landscaping the site to minimise visual and lighting impacts;
 - reviewing improved pasture species and application rates;
 - controlling weeds and feral pests;
 - controlling erosion;
 - controlling access; and
 - bushfire management;
 - include a program to monitor and report on the effectiveness of these measures, and progress against the performance and completion criteria;
 - include a mass balance calculation to ensure that appropriate volumes of material are available to implement the final landform as described in this plan;
 - provide for the construction and maintenance of the process water dam in accordance with the approved design and construction criteria (see Condition 42(b));
 - identify the potential risks to the successful rehabilitation of the site, and include a description of the contingency measures that would be implemented to mitigate these risks; and
 - include details of who would be responsible for monitoring, reviewing, and implementing the plan.

The Applicant shall implement the management plan as approved from time to time by the Secretary

Conservation and Rehabilitation Bond

61. By 31 December 2017, the Applicant shall lodge a Conservation and Rehabilitation Bond with the Department to ensure that the management of biodiversity and the rehabilitation of the site are implemented in accordance with the performance and completion criteria set out in the Flora and Fauna Management Plan and Landscape and Rehabilitation Plan. The sum of the bond shall be determined by:
- calculating the cost of rehabilitating the site taking into account the likely surface disturbance over the following 3 years of quarrying operations; and
 - employing a suitably qualified quantity surveyor or other expert to verify the calculated costs, to the satisfaction of the Secretary.

Note: If the rehabilitation of the site is completed to the satisfaction of the Secretary, then the Secretary will release the bond. If the rehabilitation of the site is not completed to the satisfaction of the Secretary, then the Secretary will call in all or part of the bond, and arrange for the completion of the relevant works.

62. Within 3 months of each Independent Environmental Audit (see Condition 70), the Applicant shall review, and if necessary revise, the sum of the Conservation and Rehabilitation Bond to the satisfaction of the Secretary. This review must consider the:
- effects of inflation;
 - likely cost of rehabilitating the site (taking into account the likely surface disturbance over the next 3 years of the development); and
 - performance of the implementation of the rehabilitation of the site to date.

ENVIRONMENTAL MANAGEMENT

Environmental Management Strategy

63. The Applicant shall prepare an Environmental Management Strategy for the development to the satisfaction of the Secretary. This strategy must:
- be submitted to the Secretary for approval by 30 June 2016;
 - provide the strategic framework for environmental management of the development;
 - identify the statutory approvals that apply to the development;
 - describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the development;
 - describe the procedures that would be implemented to:
 - keep the local community and relevant agencies informed about the operation and environmental performance of the development;
 - receive, handle, respond to, and record complaints;
 - resolve any disputes that may arise during the course of the development;
 - respond to any non-compliance;
 - respond to emergencies; and
 - include:
 - copies of any strategies, plans and programs approved under the conditions of this consent; and
 - a clear plan depicting all the monitoring required to be carried out in relation to the development.

The Environmental Management Strategy is to include a copy of the sequence of extraction as updated under Modification 2, with all dam areas on the site clearly labelled and described.

The Applicant shall implement the approved strategy as approved from time to time by the Secretary.

Adaptive Management

64. The Applicant shall assess and manage development-related risks to ensure that there are no exceedances of the criteria and/or performance measures in this Consent. Any exceedance of these criteria and/or performance measures constitutes a breach of this Consent and may be subject to penalty or offence provisions under the EP&A Act or EP&A Regulation.

Where any exceedance of these criteria and/or performance measures has occurred, the Applicant must, at the earliest opportunity:

- (a) take all reasonable and feasible steps to ensure that the exceedance ceases and does not recur;
- (b) consider all reasonable and feasible options for remediation (where relevant) and submit a report to the Department describing those options and any preferred remediation measures or other course of action; and
- (c) implement remediation measures as directed by the Secretary, to the satisfaction of the Secretary.

Management Plan Requirements

65. The Applicant shall ensure that the management plans required under this Consent are prepared in accordance with any relevant guidelines, and include:
- (a) detailed baseline data;
 - (b) a description of:
 - the relevant statutory requirements (including any relevant approval, licence or lease conditions);
 - any relevant limits or performance measures/criteria;
 - the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures;
 - (c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;
 - (d) a program to monitor and report on the:
 - impacts and environmental performance of the development;
 - effectiveness of any management measures (see c above);
 - (e) a contingency plan to manage any unpredicted impacts and their consequences;
 - (f) a program to investigate and implement ways to improve the environmental performance of the development over time;
 - (g) a protocol for managing and reporting any:
 - incidents;
 - complaints;
 - non-compliances with statutory requirements; and
 - exceedances of the impact assessment criteria and/or performance criteria; and
 - (h) a protocol for periodic review of the plan.

Note: The Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.

Annual Review

66. By the end of March each year (or as otherwise agreed by the Secretary), the Applicant shall review the environmental performance of the development for the previous calendar year to the satisfaction of the Secretary. This review must:
- (a) describe the development (including any rehabilitation) that was carried out in the past calendar year, and the development that is proposed to be carried out over the current calendar year;
 - (b) include a comprehensive review of the monitoring results and complaints records of the development over the past year, which includes a comparison of these results against the:

- relevant statutory requirements, limits or performance measures/criteria;
 - monitoring results of previous years; and
 - relevant predictions in the EIS, Modification 1 and Modification 2;
- (c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;
- (d) identify any trends in the monitoring data over the life of the development;
- (e) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and
- (f) describe what measures will be implemented over the next year to improve the environmental performance of the development.

Revision of Strategies, Plans and Programs

67. Within 3 months of the submission of:
- (a) an annual review under Condition 66 above;
 - (b) an incident report under Condition 68 below;
 - (c) an audit report under Condition 70 below; or
 - (d) any modification to the conditions of this Consent (unless the conditions require otherwise),
- the Applicant shall review, and if necessary revise, the strategies, plans, and programs required under this Consent to the satisfaction of the Secretary.

Where this review leads to revisions in any such document, then within 4 weeks of the review, unless the Secretary agrees otherwise, the revised document must be submitted to the Secretary for approval.

Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the development.

REPORTING AND AUDITING

Incident Notification

68. The Applicant must immediately notify the Department and any other relevant agencies immediately after it becomes aware of an incident. The notification must be in writing via the Major Projects Website and identify the development (including the development application number and name) and set out the location and nature of the incident.

Non-Compliance Notification

- 68A. Within seven days of becoming aware of a non-compliance, the Applicant must notify the Department of the non-compliance. The notification must be in writing via the Major Projects Website and identify the development (including the development application number and name), set out the condition of this consent that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.

Regular Reporting

69. The Applicant shall provide regular reporting on the environmental performance of the development on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this Consent.

INDEPENDENT ENVIRONMENTAL AUDIT

70. Every 3 years from the date of this consent and at the completion of works under this consent, unless the Secretary directs otherwise, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the development. This audit must:
- be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;
 - include consultation with the relevant agencies;
 - assess the environmental performance of the development and assess whether it is complying with the requirements in this Consent and any relevant EPL (including any assessment, plan or program required under these approvals);
 - review the adequacy of strategies, plans or programs required under the abovementioned approvals; and
 - recommend appropriate measures or actions to improve the environmental performance of the development, and/or any assessment, plan or program required under the abovementioned approvals.

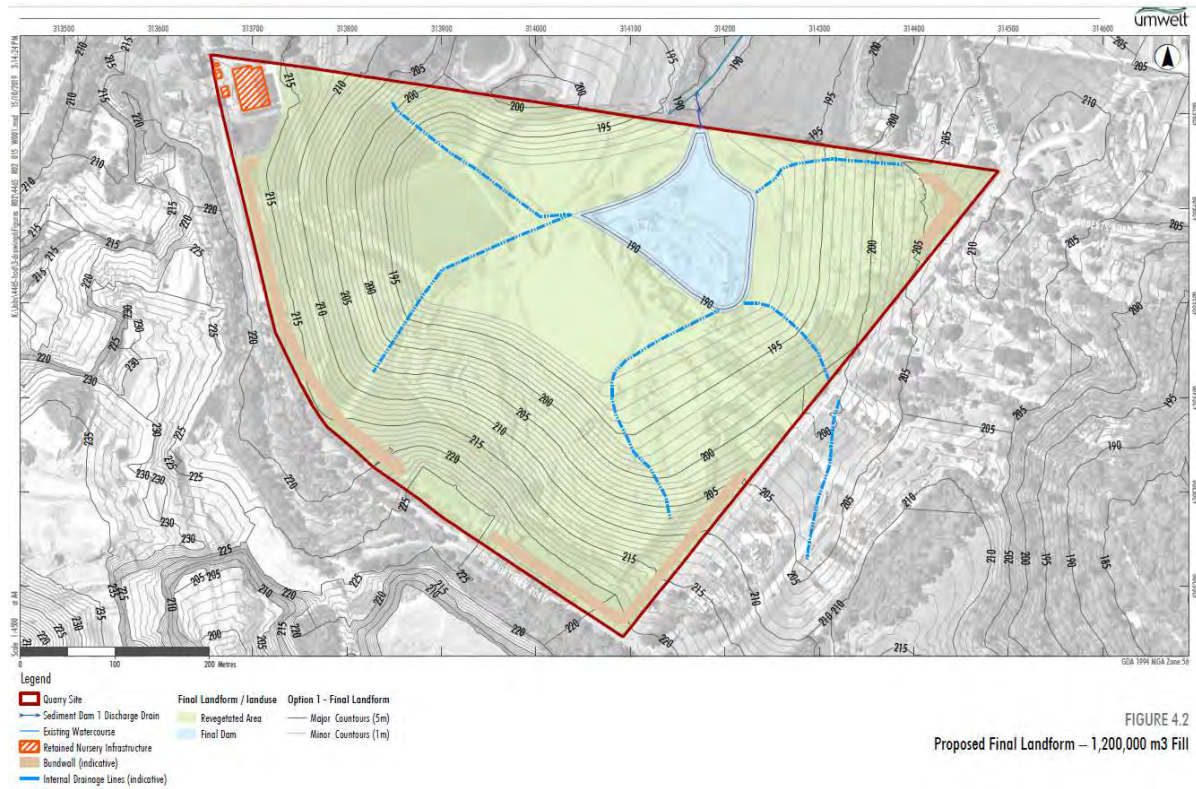
Note: This audit team must be led by a suitably qualified auditor and include experts in any field specified by the Secretary.

71. Within 6 weeks of the completion of this audit, unless the Secretary agrees otherwise, the Applicant shall submit a copy of the audit report to the Secretary, together with its response to any recommendations contained in the audit report.

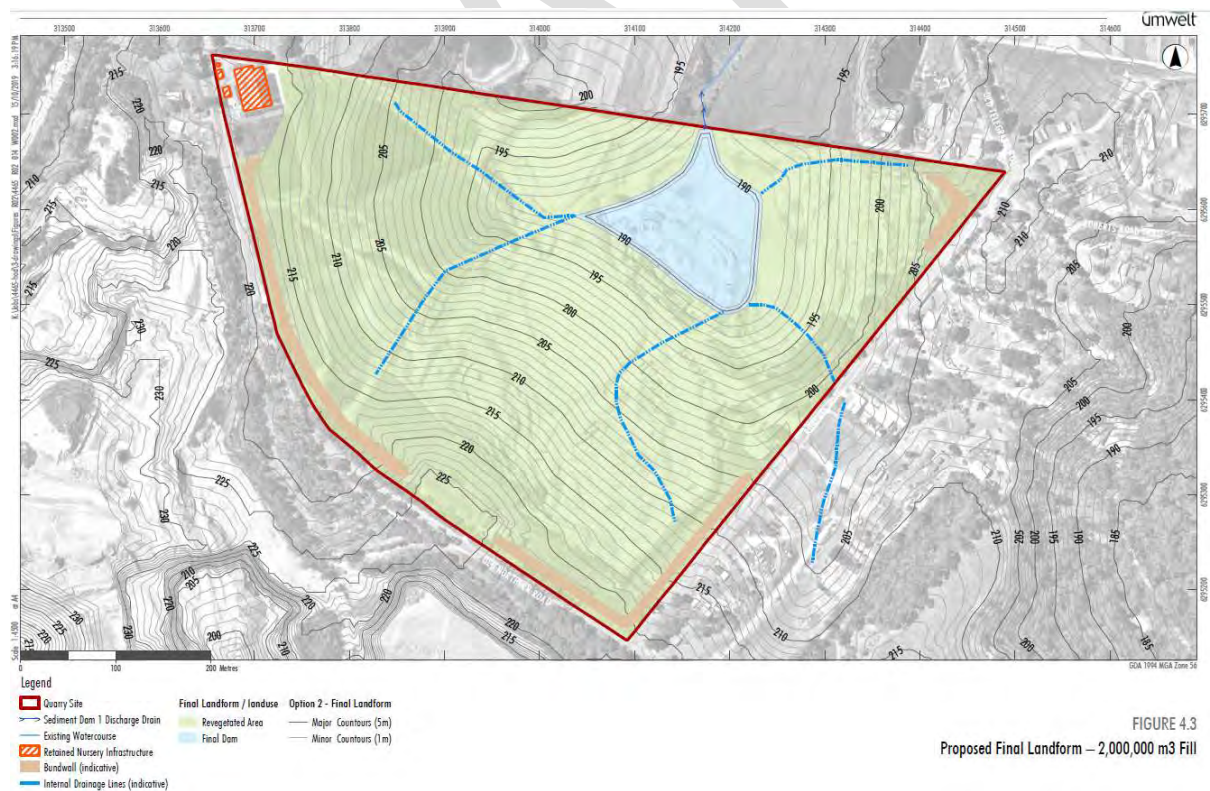
ACCESS TO INFORMATION

72. By 30 June 2016 the Applicant shall:
- make copies of the following publicly available on its website:
 - the documents identified in Condition 2(a) above;
 - current statutory approvals for the development;
 - approved strategies, plans and programs required under the conditions of this Consent;
 - a comprehensive summary of the monitoring results of the development, reported in accordance with the specifications in any conditions of this Consent, or any approved plans and programs;
 - a complaints register, which is to be updated monthly;
 - the annual reviews of the development (for the last 5 years, if applicable);
 - any independent environmental audit of the development, and the Applicant's response to the recommendations in any audit;
 - any other matter required by the Secretary; and
 - keep this information up-to-date, to the satisfaction of the Secretary.'

APPENDIX 1 FINAL LANDFORM DESIGN



Final Landform Concept 1



Final Landform Concept 2

APPENDIX 2 RECEIVER LOCATION PLAN



A solid green square is positioned to the left of the 'Appendix B' text.

Appendix B

Environmental Protection Licence 6535



Environment Protection Licence

Licence - 6535

Licence Details	
Number:	6535
Anniversary Date:	12-March

Licensee	
HB MARROOTA PTY LTD	
PO BOX 355	
GLENORIE NSW 2157	

Premises	
HB MARROOTA PTY LTD	
CNR ROBERTS & OLD NORTHERN ROADS	
MARROOTA NSW 2756	

Scheduled Activity	
Crushing, grinding or separating	
Extractive activities	
Waste disposal (application to land)	

Fee Based Activity	Scale
Crushing, grinding or separating	> 100000-500000 T annual processing capacity
Extractive activities	> 100000-500000 T annually extracted or processed
Waste disposal by application to land	Any capacity

Contact Us	
NSW EPA	
6 Parramatta Square	
10 Darcy Street	
PARRAMATTA NSW 2150	
Phone: 131 555	
Email: info@epa.nsw.gov.au	
Locked Bag 5022	
PARRAMATTA NSW 2124	



Environment Protection Licence

Licence - 6535

INFORMATION ABOUT THIS LICENCE	4
Dictionary	4
Responsibilities of licensee	4
Variation of licence conditions	4
Duration of licence	4
Licence review	4
Fees and annual return to be sent to the EPA	4
Transfer of licence	5
Public register and access to monitoring data	5
1 ADMINISTRATIVE CONDITIONS	6
A1 What the licence authorises and regulates	6
A2 Premises or plant to which this licence applies	6
A3 Information supplied to the EPA	7
2 DISCHARGES TO AIR AND WATER AND APPLICATIONS TO LAND	7
P1 Location of monitoring/discharge points and areas	7
3 LIMIT CONDITIONS	8
L1 Pollution of waters	8
L2 Waste	8
L3 Noise limits	8
4 OPERATING CONDITIONS	10
O1 Activities must be carried out in a competent manner	10
O2 Maintenance of plant and equipment	10
O3 Dust	10
O4 Other operating conditions	10
5 MONITORING AND RECORDING CONDITIONS	11
M1 Monitoring records	11
M2 Recording of pollution complaints	11
M3 Telephone complaints line	11
6 REPORTING CONDITIONS	12
R1 Annual return documents	12
R2 Notification of environmental harm	13
R3 Written report	13
7 GENERAL CONDITIONS	14
G1 Copy of licence kept at the premises or plant	14
DICTIONARY	15



Environment Protection Licence

Licence - 6535

General Dictionary -----15

Environment Protection Licence

Licence - 6535

Information about this licence

Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act);
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).



Environment Protection Licence

Licence - 6535

The EPA publication “A Guide to Licensing” contains information about how to calculate your licence fees. The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

This licence is issued to:

HB MAROOTA PTY LTD
PO BOX 355
GLENORIE NSW 2157

subject to the conditions which follow.



Environment Protection Licence

Licence - 6535

1 Administrative Conditions

A1 What the licence authorises and regulates

A1.1 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity	Fee Based Activity	Scale
Crushing, grinding or separating	Crushing, grinding or separating	> 100000 - 500000 T annual processing capacity
Extractive activities	Extractive activities	> 100000 - 500000 T annually extracted or processed
Waste disposal (application to land)	Waste disposal by application to land	Any capacity

A2 Premises or plant to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
HB MAROOTA PTY LTD
CNR ROBERTS & OLD NORTHERN ROADS
MAROOTA
NSW 2756
LOT 1 DP 228308, LOT 2 DP 228308, LOT 2 DP 312327

A2.2 The premises location is shown on the map below.

Licence - 6535



Environment Protection Licence

Licence - 6535

EPA identification no.	Type of monitoring point	Location description
1	Noise monitoring	100 Old telegraph Road, Maroota
2	Noise monitoring	35 Roberts Road, Maroota
3	Noise monitoring	4471 Northern Road, Maroota
4	Noise monitoring	11 Roberts Road, Maroota
5	Noise monitoring	4460 Old Northern Road, Maroota
6	Noise monitoring	59 Roberts Road, Maroota
7	Noise monitoring	45 Roberts Road, Maroota

3 Limit Conditions

L1 Pollution of waters

- L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

L2 Waste

- L2.1 The licensee must not:
- (a) receive more than 320,000 tonnes of VENM and ENM (in total) at the site in any calendar year;
 - (b) import more than 3 million tonnes of VENM and ENM to the site;
 - (c) import VENM and ENM beyond 31 May 2030.
- L2.2 No other materials classified as waste under the NSW EPA's Waste Classification Guidelines 2009 (or its latest version) may be received or processed on the site, except as expressly permitted in this licence or a specific resource recovery order or exemption under the Protection of the Environment Operations (Waste) Regulation 2014.

L3 Noise limits

- L3.1 Noise generated at the premises that is measured at each noise monitoring point established under this licence must not exceed the noise levels specified in Column 4 of the table below for that point during the corresponding time periods specified in Column 1 when measured using the corresponding measurement parameters listed in Column 2.

POINT 1,3,4,5,6,7

Environment Protection Licence

Licence - 6535

Time period	Measurement parameter	Measurement frequency	Noise level dB(A)
Day	L _{Aeq} (15 minute)	-	43

POINT 2

Time period	Measurement parameter	Measurement frequency	Noise level dB(A)
Day	L _{Aeq} (15 minute)	-	44

L3.2 For the purpose of condition L3.1:

a) Day means the period from 7am to 7pm Monday to Saturday and the period from 8am to 6pm Sunday and public holidays.

L3.3 a) The noise limits set out in Condition L3.1 apply under the meteorological conditions shown in the table below.

b) For those meteorological conditions not referred to in Condition L3.3(a), the noise limits that apply are the noise limits in Condition L3.1 plus 5dB.

Assessment Period	Meteorological Conditions
Day	Stability Categories A, B, C, D and E with wind speeds up to and including 3m/s at 10m above ground level.

L3.4 For the purpose of condition L3.3:

a) The meteorological conditions are to be determined from meteorological data obtained from a meteorological weather station.

b) Stability category shall be determined using the following method from fact Sheet D of the Noise Policy for Industry (NSW EPA, 2017):

i. Pasquill-Gifford stability classification scheme (section D1.3.1).

L3.5 To assess compliance:

a) with L_{Aeq} (15 minutes) noise limits in condition L3.1, the noise measurement equipment must be located:

- (i) approximately on the property boundary, where any residence is situated 30 metres or less from the property boundary closest to premises: or where applicable,
- (ii) in an area within 30 metres of a residence facade, but not closer than 3 metres where any residence on the property is situated more than 30 metres from the property boundary closest to the premises; or, where applicable,
- (iii) in an area within 50 metres of the boundary of a National Park or Nature Reserve,
- (iv) at any other location identified in condition L3.1

b) with the L_{Aeq} (15 minutes) noise limits in condition L3.1, the noise measurement equipment must be located:

- (i) at the reasonably most affected point at a location where there is no residence at the location; or,
- (ii) at the reasonably most affected point within an area at a location prescribed by condition L3.5(a).

Environment Protection Licence

Licence - 6535

- L3.6 A non-compliance of Condition L3.1 will still occur where noise generated from the premises is measured in excess of the noise limit at a point other than the reasonably most affected point at the locations referred to in condition L3. 5 (a) or L3.5 (b).

Notes to L3.5 and L3.6: The reasonably most affected point is a point at a location or within an area at a location experiencing or expected to experience the highest sound pressure level from the premises.

- L3.7 For the purpose of determining the noise generated from the premises, the modifying factor corrections in Table C1 in Fact Sheet C of the *Noise Policy for Industry* (NSW EPA, 2017) may be applied, if appropriate, to the noise measurements by the noise monitoring equipment.

- L3.8 Noise measurement must not be undertaken where rain or wind speed at microphone level will affect the acquisition of valid measurements.

4 Operating Conditions

O1 Activities must be carried out in a competent manner

- O1.1 Licensed activities must be carried out in a competent manner.

This includes:

- a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
- b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

O2 Maintenance of plant and equipment

- O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:

- a) must be maintained in a proper and efficient condition; and
- b) must be operated in a proper and efficient manner.

O3 Dust

- O3.1 The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.

- O3.2 All loaded trucks entering or leaving the premises must have their loads covered.

O4 Other operating conditions

Environment Protection Licence

Licence - 6535

O4.1 The licensee must prevent any tracking of mud on to public roads by vehicles leaving the premises.

5 Monitoring and Recording Conditions

M1 Monitoring records

- M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.
- M1.2 All records required to be kept by this licence must be:
- a) in a legible form, or in a form that can readily be reduced to a legible form;
 - b) kept for at least 4 years after the monitoring or event to which they relate took place; and
 - c) produced in a legible form to any authorised officer of the EPA who asks to see them.
- M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:
- a) the date(s) on which the sample was taken;
 - b) the time(s) at which the sample was collected;
 - c) the point at which the sample was taken; and
 - d) the name of the person who collected the sample.

M2 Recording of pollution complaints

- M2.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.
- M2.2 The record must include details of the following:
- a) the date and time of the complaint;
 - b) the method by which the complaint was made;
 - c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
 - d) the nature of the complaint;
 - e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
 - f) if no action was taken by the licensee, the reasons why no action was taken.
- M2.3 The record of a complaint must be kept for at least 4 years after the complaint was made.
- M2.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M3 Telephone complaints line

- M3.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

Environment Protection Licence

Licence - 6535

M3.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.

M3.3 The preceding two conditions do not apply until 3 months after: the date of the issue of this licence.

6 Reporting Conditions

R1 Annual return documents

R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:

1. a Statement of Compliance,
2. a Monitoring and Complaints Summary,
3. a Statement of Compliance - Licence Conditions,
4. a Statement of Compliance - Load based Fee,
5. a Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan,
6. a Statement of Compliance - Requirement to Publish Pollution Monitoring Data; and
7. a Statement of Compliance - Environmental Management Systems and Practices.

At the end of each reporting period, the EPA will provide to the licensee notification that the Annual Return is due.

R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

R1.3 Where this licence is transferred from the licensee to a new licensee:

- a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
- b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:

- a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
- b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

R1.5 The Annual Return for the reporting period must be supplied to the EPA via eConnect *EPA* or by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

R1.6 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

R1.7 Within the Annual Return, the Statements of Compliance must be certified and the Monitoring and Complaints

Environment Protection Licence

Licence - 6535

Summary must be signed by:

- a) the licence holder; or
- b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

R2 Notification of environmental harm

R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.

R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which they became aware of the incident.

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R3 Written report

R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:

- a) where this licence applies to premises, an event has occurred at the premises; or
 - b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence,
- and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.

R3.3 The request may require a report which includes any or all of the following information:

- a) the cause, time and duration of the event;
- b) the type, volume and concentration of every pollutant discharged as a result of the event;
- c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;
- d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
- e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
- f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
- g) any other relevant matters.

R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not

Environment Protection Licence

Licence - 6535

satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

7 General Conditions

G1 Copy of licence kept at the premises or plant

G1.1 A copy of this licence must be kept at the premises to which the licence applies.

G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.

G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.



Environment Protection Licence

Licence - 6535

Dictionary

General Dictionary

3DGM [in relation to a concentration limit]	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
AM	Together with a number, means an ambient air monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
BOD	Means biochemical oxygen demand
CEM	Together with a number, means a continuous emission monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009.
general solid waste (non-putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997

Environment Protection Licence

Licence - 6535

flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
general solid waste (putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder described at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 months. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
restricted solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
special waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	Together with a number, means a test method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .



Environment Protection Licence

Licence - 6535

TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste type	Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non-putrescible), special waste or hazardous waste
Wellhead	Has the same meaning as in Schedule 1 to the Protection of the Environment Operations (General) Regulation 2021.

Mr Nigel Sargent

Environment Protection Authority

(By Delegation)

Date of this edition: 14-June-2000

Environment Protection Licence

Licence - 6535

End Notes

- 1 Licence varied by change to Common Name field, issued on 15-Oct-2001, which came into effect on 15-Oct-2001.
- 2 Licence transferred through application 140865, approved on 29-Oct-2001, which came into effect on 24-Sep-2001.
- 3 Licence varied by notice 1012523, issued on 21-May-2002, which came into effect on 15-Jun-2002.
- 4 Licence varied by correction to EPA Sub Region data record, issued on 20-Sep-2002, which came into effect on 20-Sep-2002.
- 5 Licence transferred through application 141899, approved on 23-Apr-2003, which came into effect on 21-Apr-2003.
- 6 Licence varied by notice 1034428, issued on 13-Dec-2004, which came into effect on 07-Jan-2005.
- 7 Licence varied by notice 1081877, issued on 10-Mar-2008, which came into effect on 10-Mar-2008.
- 8 Licence varied by Change to schedule 1, issued on 07-May-2008, which came into effect on 07-May-2008.
- 9 Condition A1.3 Not applicable varied by notice issued on <issue date> which came into effect on <effective date>
- 10 Licence varied by notice 1111632, issued on 01-Apr-2010, which came into effect on 01-Apr-2010.
- 11 Licence varied by notice 1527501 issued on 09-Mar-2015
- 12 Licence varied by notice 1529566 issued on 03-Jun-2015
- 13 Licence varied by notice 1603067 issued on 26-Nov-2020
- 14 Licence varied by notice 1627580 issued on 16-Jun-2023

Appendix C

Water Licence Conditions

NSW Office of Water

Sydney South Coast Region
Po Box 3720
10 Valentine Avenue
Parramatta NSW 2124
Phone: (02) 82817777

BORE LICENSE CERTIFICATE UNDER SECTION 115 OF THE WATER ACT, 1912

10BL158808



Maroota Super Fund Pty Ltd
P O Box 1778
Gosford NSW 2250

LICENSE NUMBER
10BL158808
DATE LICENSE VALID FROM
12-Nov-1998
DATE LICENSE VALID TO
PERPETUITY
FEE
\$0.00

ABN 47661556763 GST NIL

LOCATION OF WORKS		
Portion(s) or Lot/Section/DP	PARISH	COUNTY
1//228308	Maroota	Cumberland

PT84MW1 & PT84MW5

TYPE OF WORKS	PURPOSE(S) FOR WHICH WATER MAY BE USED
Bore	Monitoring Bore

CONDITIONS APPLYING TO THIS LICENSE ARE

As shown on the attached Condition Statement

COPY

NSW Office of Water

**CONDITIONS STATEMENT REFERRED TO ON
10BL158808
ISSUED UNDER PART V OF THE WATER ACT, 1912
ON 12-Nov-1998**

(1) THE LICENCE SHALL LAPSE IF THE WORK IS NOT COMMENCED AND COMPLETED WITHIN THREE YEARS OF THE DATE OF THE ISSUE OF THE LICENCE.

(2) THE LICENSEE SHALL WITHIN TWO MONTHS OF COMPLETION OR AFTER THE ISSUE OF THE LICENSE IF THE WORK IS EXISTING, FURNISH TO NSW OFFICE OF WATER:-

(A) DETAILS OF THE WORK SET OUT IN THE ATTACHED FORM "A" (MUST BE COMPLETED BY A DRILLER).

(B) A PLAN SHOWING ACCURATELY THE LOCATION OF THE WORK, IN RELATION TO PORTION AND PROPERTY BOUNDARIES.

(C) A ONE LITRE WATER SAMPLE FOR ALL LICENCES OTHER THAN THOSE FOR STOCK, DOMESTIC, TEST BORES AND FARMING PURPOSES.

(D) DETAILS OF ANY WATER ANALYSIS AND/OR PUMPING TESTS.

(3) THE LICENSEE SHALL ALLOW NSW OFFICE OF WATER OR ANY PERSON AUTHORISED BY IT, FULL AND FREE ACCESS TO THE WORKS, EITHER DURING OR AFTER CONSTRUCTION, FOR THE PURPOSE OF CARRYING OUT INSPECTION OR TEST OF THE WORKS AND ITS FITTINGS AND SHALL CARRY OUT ANY WORK OR ALTERATIONS DEEMED NECESSARY BY THE DEPARTMENT FOR THE PROTECTION AND PROPER MAINTENANCE OF THE WORKS, OR THE CONTROL OF THE WATER EXTRACTED AND FOR THE PROTECTION OF THE QUALITY AND THE PREVENTION FROM POLLUTION OR CONTAMINATION OF SUB-SURFACE WATER.

(4) IF DURING THE CONSTRUCTION OF THE WORK, SALINE OR POLLUTED WATER IS ENCOUNTERED ABOVE THE PRODUCING AQUIFER, SUCH WATER SHALL BE SEALED OFF BY:-

(A) INSERTING THE APPROPRIATE LENGTH(S) OF CASING TO A DEPTH SUFFICIENT TO EXCLUDE THE SALINE OR POLLUTED WATER FROM THE WORK.

(B) CEMENTING BETWEEN THE CASING(S) AND THE WALLS OF THE BORE HOLE FROM THE BOTTOM OF THE CASING TO GROUND LEVEL.

ANY DEPARTURE FROM THESE PROCEDURES MUST BE APPROVED BY THE DEPARTMENT BEFORE UNDERTAKING THE WORK.

(5) (A) THE LICENSEE SHALL NOTIFY NSW OFFICE OF WATER IF A FLOWING SUPPLY OF WATER IS OBTAINED. THE BORE SHALL THEN BE LINED WITH CASING AND CEMENTED AND A SUITABLE CLOSING GEAR SHALL BE ATTACHED TO THE BOREHEAD AS SPECIFIED BY NSW OFFICE OF WATER.

(B) IF A FLOWING SUPPLY OF WATER IS OBTAINED FROM THE WORK, THE LICENSEE SHALL ONLY DISTRIBUTE WATER FROM THE BORE HEAD BY A SYSTEM OF PIPE LINES AND SHALL NOT DISTRIBUTE IT IN DRAINS, NATURAL OR ARTIFICIAL CHANNELS OR DEPRESSIONS.

(6) IF A WORK IS ABANDONED AT ANY TIME THE LICENSEE SHALL NOTIFY NSW OFFICE OF WATER THAT THE WORK HAS BEEN ABANDONED AND SEAL OFF THE AQUIFER BY:-

(A) BACKFILLING THE WORK TO GROUND LEVEL WITH CLAY OR CEMENT AFTER WITHDRAWING THE CASING (LINING); OR

(B) SUCH METHODS AS AGREED TO OR DIRECTED BY NSW OFFICE OF WATER.

(7) THE LICENSEE SHALL NOT ALLOW ANY TAILWATER/DRAINAGE TO DISCHARGE INTO OR ONTO:-

- ANY ADJOINING PUBLIC OR CROWN ROAD;
- ANY OTHER PERSONS LAND;
- ANY CROWN LAND;
- ANY RIVER, CREEK OR WATERCOURSE;
- ANY NATIVE VEGETATION AS DESCRIBED UNDER THE NATIVE VEGETATION CONSERVATION ACT 1997;
- ANY WETLANDS OF ENVIRONMENTAL SIGNIFICANCE.

(8) WORKS USED FOR THE PURPOSE OF CONVEYING, DISTRIBUTING OR STORING WATER TAKEN BY MEANS OF THE LICENSED WORK SHALL NOT BE CONSTRUCTED OR INSTALLED SO AS TO OBSTRUCT THE REASONABLE PASSAGE OF FLOOD WATERS FLOWING INTO OR FROM A RIVER.

(9) IF THE BORE AUTHORISED BY THIS LICENSE IS LINED WITH STEEL OR PLASTIC CASING THE INSIDE DIAMETER OF THAT CASING SHALL NOT EXCEED 220 MM.

(10) WATER SHALL NOT BE PUMPED FROM THE BORE AUTHORISED BY THIS LICENSE FOR ANY PURPOSE OTHER THAN GROUNDWATER INVESTIGATION.

(11) SUBJECT TO CONDITION (12) THE LICENSEE SHALL, WITHIN TWO MONTHS OF THE DATE OF COMPLETION OF THE BORE AUTHORISED BY THE LICENSE,

(1) BACKFILL IT WITH CLAY OR CEMENT TO GROUND LEVEL, AFTER WITHDRAWING ANY CASING(LINING), OR:-

(2) RENDER IT INEFFECTIVE BY ANY OTHER MEANS ACCEPTABLE TO THE DEPARTMENT.

(12) CONDITION (11) SHALL HAVE NO FORCE OR EFFECT IF:-

(1) AT THE RELEVANT TIME THERE IS WITH NSW OFFICE OF WATER, AN APPLICATION IN RESPECT OF WHICH THE DEPARTMENT HAS NOT MADE A DECISION TO CONVERT THE GROUNDWATER INVESTIGATION BORE INTO A PRODUCTION BORE; OR

(2) THE LICENSEE HAS COMPLETED THE BORE FOR THE PURPOSE OF MEASURING WATER LEVELS OR WATER QUALITY BY THE ADDITION OF CASING WITH A DIAMETER NOT EXCEEDING 220MM.

End Of Conditions

Information about a water licence or approval

Use this tool to search for information about water licences and approvals issued under the *Water Act 1912* or *Water Management Act 2000*.

Select the type of licence or approval and enter the licence or approval number:

- **Water access licence (WAL):** a WAL number starts with the letters 'WAL' followed by several numbers; a WAL also has a reference number that starts with a two digit number, followed by 'AL' and then several numbers.
- **1912 water licence:** a water licence number starts with a two digit number, followed by a two letter code and then several numbers. Note: a PT reference number cannot be entered.
- **Approval:** an approval number starts with a two digit number, followed by a two letter code (WA, UA, CA or FW) and then several numbers.

Search for information about either a:

- ☐ [Water access licence \(WAL\) issued under the *Water Management Act 2000*](#)
- ☐ [Approval issued under the *Water Management Act 2000*](#)

Find out if a *Water Act 1912* licence has been converted

☒ Water licence conversion status

Water Licence Number

10 ▼

BL ▼

158808

Notes:

Water Act 1912 licences and authorities are being converted to water access licences and approvals under the *Water Management Act 2000* as water sharing plans commence (see [licence conversion](#)).

If a *Water Act 1912* licence has been converted, the search results will display the water access licences and approvals that have been created. Water access licences are registered in the [Water Access Licence Register](#) administered by Land and Property Information. Those water access licences that do not display a WAL number in the search results are still to have their licence details confirmed and completed.

Due to privacy laws very little information on *Water Act 1912* licence and authorities can be made freely available. Full information for a particular licence or authority can be obtained if required for conveyancing by applying to the NSW Office of Water. See [legal searches for water related interests](#).

« Previous Search

Print Export

Search Results

The licence **10BL158808** has not been converted and is not subject to a water sharing plan.

Disclaimer: The NSW Office of Water does not warrant the data is current nor does it warrant that the data or the data capturing processes are free from corruption or error.

Privacy: The information provided is limited to meet the requirements of section 57 of the *Privacy and Personal Information Act 1998*.

Exporting and printing: Search results show a maximum of 50 rows per page. Search results can only be printed page by page.

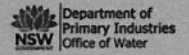
More information: Should you require further information or technical assistance, please submit your request to water.enquiries@dpi.nsw.gov.au or contact 1800 353 104.

NSW Office of Water

Sydney South Coast Region
Po Box 3720
10 Valentine Avenue
Parramatta NSW 2124
Phone: (02) 82817777

BORE LICENSE CERTIFICATE UNDER SECTION 115 OF THE WATER ACT, 1912

10BL605696



Maroota Super Fund Pty Ltd
P O Box 1778
Gosford NSW 2250

LICENSE NUMBER
10BL605696
DATE LICENSE VALID FROM
13-Jan-2015
DATE LICENSE VALID TO
PERPETUITY
FEE
\$0.00

ABN 47661556763 GST NIL

LOCATION OF WORKS

Portion(s) or Lot/Section/DP
1//228308

PARISH
Maroota

COUNTY
Cumberland

TYPE OF WORKS

Bore

PURPOSE(S) FOR WHICH WATER MAY BE USED

Monitoring Bore

PT84MW6

CONDITIONS APPLYING TO THIS LICENSE ARE

As shown on the attached Condition Statement

ORIGINAL

NSW Office of Water

**CONDITIONS STATEMENT REFERRED TO ON
10BL605696
ISSUED UNDER PART V OF THE WATER ACT, 1912
ON 13-Jan-2015**

(1) THE LICENCE SHALL LAPSE IF THE WORK IS NOT COMMENCED AND COMPLETED WITHIN THREE YEARS OF THE DATE OF THE ISSUE OF THE LICENCE.

(2) THE LICENSEE SHALL WITHIN TWO MONTHS OF COMPLETION OR AFTER THE ISSUE OF THE LICENSE IF THE WORK IS EXISTING, FURNISH TO NSW OFFICE OF WATER:-

(A) DETAILS OF THE WORK SET OUT IN THE ATTACHED FORM "A" (MUST BE COMPLETED BY A DRILLER).

(B) A PLAN SHOWING ACCURATELY THE LOCATION OF THE WORK, IN RELATION TO PORTION AND PROPERTY BOUNDARIES.

(C) A ONE LITRE WATER SAMPLE FOR ALL LICENCES OTHER THAN THOSE FOR STOCK, DOMESTIC, TEST BORES AND FARMING PURPOSES.

(D) DETAILS OF ANY WATER ANALYSIS AND/OR PUMPING TESTS.

(3) THE LICENSEE SHALL ALLOW NSW OFFICE OF WATER OR ANY PERSON AUTHORISED BY IT, FULL AND FREE ACCESS TO THE WORKS, EITHER DURING OR AFTER CONSTRUCTION, FOR THE PURPOSE OF CARRYING OUT INSPECTION OR TEST OF THE WORKS AND ITS FITTINGS AND SHALL CARRY OUT ANY WORK OR ALTERATIONS DEEMED NECESSARY BY THE DEPARTMENT FOR THE PROTECTION AND PROPER MAINTENANCE OF THE WORKS, OR THE CONTROL OF THE WATER EXTRACTED AND FOR THE PROTECTION OF THE QUALITY AND THE PREVENTION FROM POLLUTION OR CONTAMINATION OF SUB-SURFACE WATER.

(4) IF DURING THE CONSTRUCTION OF THE WORK, SALINE OR POLLUTED WATER IS ENCOUNTERED ABOVE THE PRODUCING AQUIFER, SUCH WATER SHALL BE SEALED OFF BY:-

(A) INSERTING THE APPROPRIATE LENGTH(S) OF CASING TO A DEPTH SUFFICIENT TO EXCLUDE THE SALINE OR POLLUTED WATER FROM THE WORK.

(B) CEMENTING BETWEEN THE CASING(S) AND THE WALLS OF THE BORE HOLE FROM THE BOTTOM OF THE CASING TO GROUND LEVEL.

ANY DEPARTURE FROM THESE PROCEDURES MUST BE APPROVED BY THE DEPARTMENT BEFORE UNDERTAKING THE WORK.

(5) (A) THE LICENSEE SHALL NOTIFY NSW OFFICE OF WATER IF A FLOWING SUPPLY OF WATER IS OBTAINED. THE BORE SHALL THEN BE LINED WITH CASING AND CEMENTED AND A SUITABLE CLOSING GEAR SHALL BE ATTACHED TO THE BOREHEAD AS SPECIFIED BY NSW OFFICE OF WATER.

(B) IF A FLOWING SUPPLY OF WATER IS OBTAINED FROM THE WORK, THE LICENSEE SHALL ONLY DISTRIBUTE WATER FROM THE BORE HEAD BY A SYSTEM OF PIPE LINES AND SHALL NOT DISTRIBUTE IT IN DRAINS, NATURAL OR ARTIFICIAL CHANNELS OR DEPRESSIONS.

(6) IF A WORK IS ABANDONED AT ANY TIME THE LICENSEE SHALL NOTIFY NSW OFFICE OF WATER THAT THE WORK HAS BEEN ABANDONED AND SEAL OFF THE AQUIFER BY:-

(A) BACKFILLING THE WORK TO GROUND LEVEL WITH CLAY OR CEMENT AFTER WITHDRAWING THE CASING (LINING); OR

(B) SUCH METHODS AS AGREED TO OR DIRECTED BY NSW OFFICE OF WATER.

(7) THE LICENSEE SHALL NOT ALLOW ANY TAILWATER/DRAINAGE TO DISCHARGE INTO OR ONTO:-

- ANY ADJOINING PUBLIC OR CROWN ROAD;
- ANY OTHER PERSONS LAND;
- ANY CROWN LAND;
- ANY RIVER, CREEK OR WATERCOURSE;
- ANY NATIVE VEGETATION AS DESCRIBED UNDER THE NATIVE VEGETATION CONSERVATION ACT 1997;
- ANY WETLANDS OF ENVIRONMENTAL SIGNIFICANCE.

(8) WORKS USED FOR THE PURPOSE OF CONVEYING, DISTRIBUTING OR STORING WATER TAKEN BY MEANS OF THE LICENSED WORK SHALL NOT BE CONSTRUCTED OR INSTALLED SO AS TO OBSTRUCT THE REASONABLE PASSAGE OF FLOOD WATERS FLOWING INTO OR FROM A RIVER.

(9) IF THE BORE AUTHORISED BY THIS LICENSE IS LINED WITH STEEL OR PLASTIC CASING THE INSIDE DIAMETER OF THAT CASING SHALL NOT EXCEED 220 MM.

(10) WATER SHALL NOT BE PUMPED FROM THE BORE AUTHORISED BY THIS LICENSE FOR ANY PURPOSE OTHER THAN GROUNDWATER INVESTIGATION.

(11) SUBJECT TO CONDITION (12) THE LICENSEE SHALL WITHIN TWO MONTHS OF THE DATE OF COMPLETION OF THE BORE AUTHORISED BY THE LICENSE,

(1) BACKFILL IT WITH CLAY OR CEMENT TO GROUND LEVEL, AFTER WITHDRAWING ANY CASING(LINING), OR:-

(2) RENDER IT INEFFECTIVE BY ANY OTHER MEANS ACCEPTABLE TO THE DEPARTMENT.

(12) CONDITION (11) SHALL HAVE NO FORCE OR EFFECT IF:-

(1) AT THE RELEVANT TIME THERE IS WITH NSW OFFICE OF WATER, AN APPLICATION IN RESPECT OF WHICH THE DEPARTMENT HAS NOT MADE A DECISION TO CONVERT THE GROUNDWATER INVESTIGATION BORE INTO A PRODUCTION BORE; OR

(2) THE LICENSEE HAS COMPLETED THE BORE FOR THE PURPOSE OF MEASURING WATER LEVELS OR WATER QUALITY BY THE ADDITION OF CASING WITH A DIAMETER NOT EXCEEDING 220MM.

End Of Conditions

Information about a water licence or approval

Use this tool to search for information about water licences and approvals issued under the *Water Act 1912* or *Water Management Act 2000*.

Select the type of licence or approval and enter the licence or approval number:

- **Water access licence (WAL):** a WAL number starts with the letters 'WAL' followed by several numbers; a WAL also has a reference number that starts with a two digit number, followed by 'AL' and then several numbers.
- **1912 water licence:** a water licence number starts with a two digit number, followed by a two letter code and then several numbers. Note: a PT reference number cannot be entered.
- **Approval:** an approval number starts with a two digit number, followed by a two letter code (WA, UA, CA or FW) and then several numbers.

Search for information about either a:

- ☐ [Water access licence \(WAL\) issued under the *Water Management Act 2000*](#)
- ☐ [Approval issued under the *Water Management Act 2000*](#)

Find out if a *Water Act 1912* licence has been converted

☒ Water licence conversion status

Water Licence Number

10 ▼

BL ▼

60 5696

Notes:

Water Act 1912 licences and authorities are being converted to water access licences and approvals under the *Water Management Act 2000* as water sharing plans commence (see [licence conversion](#)).

If a *Water Act 1912* licence has been converted, the search results will display the water access licences and approvals that have been created. Water access licences are registered in the [Water Access Licence Register](#) administered by Land and Property Information. Those water access licences that do not display a WAL number in the search results are still to have their licence details confirmed and completed.

Due to privacy laws very little information on *Water Act 1912* licence and authorities can be made freely available. Full information for a particular licence or authority can be obtained if required for conveyancing by applying to the NSW Office of Water. See [legal searches for water related interests](#).

« Previous Search

Print Export

Search Results

The licence **10BL605696** has not been converted and is not subject to a water sharing plan.

Disclaimer: The NSW Office of Water does not warrant the data is current nor does it warrant that the data or the data capturing processes are free from corruption or error.

Privacy: The information provided is limited to meet the requirements of section 57 of the *Privacy and Personal Information Act 1998*.

Exporting and printing: Search results show a maximum of 50 rows per page. Search results can only be printed page by page.

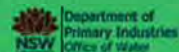
More information: Should you require further information or technical assistance, please submit your request to water.enquiries@dpi.nsw.gov.au or contact 1800 353 104.

NSW Office of Water

Sydney South Coast Region
Locked Bag 5123
Level 11, 10 Valentine Avenue
Parramatta NSW 2124
Phone: (18) 00353104

BORE LICENSE CERTIFICATE UNDER SECTION 115 OF THE WATER ACT, 1912

10BL605795



Maroota Super Fund Pty Ltd
P O Box 1778
Gosford NSW 2250

LICENSE NUMBER
10BL605795
DATE LICENSE VALID FROM
29-Aug-2016
DATE LICENSE VALID TO
PERPETUITY
FEE
\$0.00

ABN 72189919072 GST NIL

LOCATION OF WORKS

Portion(s) or Lot/Section/DP
1//228308

PARISH
Maroota

COUNTY
Cumberland

MW 8, 9, 13

TYPE OF WORKS

Bore

PURPOSE(S) FOR WHICH WATER MAY BE USED

Monitoring Bore

CONDITIONS APPLYING TO THIS LICENSE ARE

As shown on the attached Condition Statement

ORIGINAL

NSW Office of Water

**CONDITIONS STATEMENT REFERRED TO ON
10BL605795
ISSUED UNDER PART V OF THE WATER ACT, 1912
ON 29-Aug-2016**

- (1) THE LICENCE SHALL LAPSE IF THE WORK IS NOT COMMENCED AND COMPLETED WITHIN THREE YEARS OF THE DATE OF THE ISSUE OF THE LICENCE.
- (2) THE LICENSEE SHALL WITHIN TWO MONTHS OF COMPLETION OR AFTER THE ISSUE OF THE LICENSE IF THE WORK IS EXISTING, FURNISH TO NSW OFFICE OF WATER:-
- (A) DETAILS OF THE WORK SET OUT IN THE ATTACHED FORM "A" (MUST BE COMPLETED BY A DRILLER).
- (B) A PLAN SHOWING ACCURATELY THE LOCATION OF THE WORK, IN RELATION TO PORTION AND PROPERTY BOUNDARIES.
- (C) A ONE LITRE WATER SAMPLE FOR ALL LICENCES OTHER THAN THOSE FOR STOCK, DOMESTIC, TEST BORES AND FARMING PURPOSES.
- (D) DETAILS OF ANY WATER ANALYSIS AND/OR PUMPING TESTS.
- (3) THE LICENSEE SHALL ALLOW NSW OFFICE OF WATER OR ANY PERSON AUTHORISED BY IT, FULL AND FREE ACCESS TO THE WORKS, EITHER DURING OR AFTER CONSTRUCTION, FOR THE PURPOSE OF CARRYING OUT INSPECTION OR TEST OF THE WORKS AND ITS FITTINGS AND SHALL CARRY OUT ANY WORK OR ALTERATIONS DEEMED NECESSARY BY THE DEPARTMENT FOR THE PROTECTION AND PROPER MAINTENANCE OF THE WORKS, OR THE CONTROL OF THE WATER EXTRACTED AND FOR THE PROTECTION OF THE QUALITY AND THE PREVENTION FROM POLLUTION OR CONTAMINATION OF SUB-SURFACE WATER.
- (4) IF DURING THE CONSTRUCTION OF THE WORK, SALINE OR POLLUTED WATER IS ENCOUNTERED ABOVE THE PRODUCING AQUIFER, SUCH WATER SHALL BE SEALED OFF BY:-
- (A) INSERTING THE APPROPRIATE LENGTH(S) OF CASING TO A DEPTH SUFFICIENT TO EXCLUDE THE SALINE OR POLLUTED WATER FROM THE WORK.
- (B) CEMENTING BETWEEN THE CASING(S) AND THE WALLS OF THE BORE HOLE FROM THE BOTTOM OF THE CASING TO GROUND LEVEL.
- ANY DEPARTURE FROM THESE PROCEDURES MUST BE APPROVED BY THE DEPARTMENT BEFORE UNDERTAKING THE WORK.
- (5) (A) THE LICENSEE SHALL NOTIFY NSW OFFICE OF WATER IF A FLOWING SUPPLY OF WATER IS OBTAINED. THE BORE SHALL THEN BE LINED WITH CASING AND CEMENTED AND A SUITABLE CLOSING GEAR SHALL BE ATTACHED TO THE BOREHEAD AS SPECIFIED BY NSW OFFICE OF WATER.
- (B) IF A FLOWING SUPPLY OF WATER IS OBTAINED FROM THE WORK, THE LICENSEE SHALL ONLY DISTRIBUTE WATER FROM THE BORE HEAD BY A SYSTEM OF PIPE LINES AND SHALL NOT DISTRIBUTE IT IN DRAINS, NATURAL OR ARTIFICIAL CHANNELS OR DEPRESSIONS.
- (6) IF A WORK IS ABANDONED AT ANY TIME THE LICENSEE SHALL NOTIFY NSW OFFICE OF WATER THAT THE WORK HAS BEEN ABANDONED AND SEAL OFF THE AQUIFER BY:-
- (A) BACKFILLING THE WORK TO GROUND LEVEL WITH CLAY OR CEMENT AFTER WITHDRAWING THE CASING (LINING); OR
- (B) SUCH METHODS AS AGREED TO OR DIRECTED BY NSW OFFICE OF WATER.

(7) THE LICENSEE SHALL NOT ALLOW ANY TAILWATER/DRAINAGE TO DISCHARGE INTO OR ONTO:-

- ANY ADJOINING PUBLIC OR CROWN ROAD;
- ANY OTHER PERSONS LAND;
- ANY CROWN LAND;
- ANY RIVER, CREEK OR WATERCOURSE;
- ANY NATIVE VEGETATION AS DESCRIBED UNDER THE NATIVE VEGETATION CONSERVATION ACT 1997;
- ANY WETLANDS OF ENVIRONMENTAL SIGNIFICANCE.

(8) WORKS USED FOR THE PURPOSE OF CONVEYING, DISTRIBUTING OR STORING WATER TAKEN BY MEANS OF THE LICENSED WORK SHALL NOT BE CONSTRUCTED OR INSTALLED SO AS TO OBSTRUCT THE REASONABLE PASSAGE OF FLOOD WATERS FLOWING INTO OR FROM A RIVER.

(9) IF THE BORE AUTHORISED BY THIS LICENSE IS LINED WITH STEEL OR PLASTIC CASING THE INSIDE DIAMETER OF THAT CASING SHALL NOT EXCEED 220 MM.

(10) WATER SHALL NOT BE PUMPED FROM THE BORE AUTHORISED BY THIS LICENSE FOR ANY PURPOSE OTHER THAN GROUNDWATER INVESTIGATION.

(11) SUBJECT TO CONDITION (12) THE LICENSEE SHALL WITHIN TWO MONTHS OF THE DATE OF COMPLETION OF THE BORE AUTHORISED BY THE LICENSE,

(1) BACKFILL IT WITH CLAY OR CEMENT TO GROUND LEVEL, AFTER WITHDRAWING ANY CASING(LINING), OR:-

(2) RENDER IT INEFFECTIVE BY ANY OTHER MEANS ACCEPTABLE TO THE DEPARTMENT.

(12) CONDITION (11) SHALL HAVE NO FORCE OR EFFECT IF:-

(1) AT THE RELEVANT TIME THERE IS WITH NSW OFFICE OF WATER, AN APPLICATION IN RESPECT OF WHICH THE DEPARTMENT HAS NOT MADE A DECISION TO CONVERT THE GROUNDWATER INVESTIGATION BORE INTO A PRODUCTION BORE; OR

(2) THE LICENSEE HAS COMPLETED THE BORE FOR THE PURPOSE OF MEASURING WATER LEVELS OR WATER QUALITY BY THE ADDITION OF CASING WITH A DIAMETER NOT EXCEEDING 220MM.

End Of Conditions

NSW Office of Water

Sydney South Coast Region
Locked Bag 5123
Level 11, 10 Valentine Avenue
Parramatta NSW 2124
Phone: (18) 00353104

BORE LICENSE CERTIFICATE UNDER SECTION 115 OF THE WATER ACT, 1912

10BL605797



Hitchcock, Noelene Joyce
100 Old Telegraph Road
Maroota NSW 2756

LICENSE NUMBER
10BL605797
DATE LICENSE VALID FROM
29-Aug-2016
DATE LICENSE VALID TO
PERPETUITY
FEE
\$0.00

ABN 72189919072 GST NIL

LOCATION OF WORKS

Portion(s) or Lot/Section/DP
B//356946

PARISH
Maroota

COUNTY
Cumberland

MW11

TYPE OF WORKS

Bore

PURPOSE(S) FOR WHICH WATER MAY BE USED

Monitoring Bore

CONDITIONS APPLYING TO THIS LICENSE ARE

As shown on the attached Condition Statement

ORIGINAL

NSW Office of Water

**CONDITIONS STATEMENT REFERRED TO ON
10BL605797
ISSUED UNDER PART V OF THE WATER ACT, 1912
ON 29-Aug-2016**

(1) THE LICENCE SHALL LAPSE IF THE WORK IS NOT COMMENCED AND COMPLETED WITHIN THREE YEARS OF THE DATE OF THE ISSUE OF THE LICENCE.

(2) THE LICENSEE SHALL WITHIN TWO MONTHS OF COMPLETION OR AFTER THE ISSUE OF THE LICENSE IF THE WORK IS EXISTING, FURNISH TO NSW OFFICE OF WATER:-

(A) DETAILS OF THE WORK SET OUT IN THE ATTACHED FORM "A" (MUST BE COMPLETED BY A DRILLER).

(B) A PLAN SHOWING ACCURATELY THE LOCATION OF THE WORK, IN RELATION TO PORTION AND PROPERTY BOUNDARIES.

(C) A ONE LITRE WATER SAMPLE FOR ALL LICENCES OTHER THAN THOSE FOR STOCK, DOMESTIC, TEST BORES AND FARMING PURPOSES.

(D) DETAILS OF ANY WATER ANALYSIS AND/OR PUMPING TESTS.

(3) THE LICENSEE SHALL ALLOW NSW OFFICE OF WATER OR ANY PERSON AUTHORISED BY IT, FULL AND FREE ACCESS TO THE WORKS, EITHER DURING OR AFTER CONSTRUCTION, FOR THE PURPOSE OF CARRYING OUT INSPECTION OR TEST OF THE WORKS AND ITS FITTINGS AND SHALL CARRY OUT ANY WORK OR ALTERATIONS DEEMED NECESSARY BY THE DEPARTMENT FOR THE PROTECTION AND PROPER MAINTENANCE OF THE WORKS, OR THE CONTROL OF THE WATER EXTRACTED AND FOR THE PROTECTION OF THE QUALITY AND THE PREVENTION FROM POLLUTION OR CONTAMINATION OF SUB-SURFACE WATER.

(4) IF DURING THE CONSTRUCTION OF THE WORK, SALINE OR POLLUTED WATER IS ENCOUNTERED ABOVE THE PRODUCING AQUIFER, SUCH WATER SHALL BE SEALED OFF BY:-

(A) INSERTING THE APPROPRIATE LENGTH(S) OF CASING TO A DEPTH SUFFICIENT TO EXCLUDE THE SALINE OR POLLUTED WATER FROM THE WORK.

(B) CEMENTING BETWEEN THE CASING(S) AND THE WALLS OF THE BORE HOLE FROM THE BOTTOM OF THE CASING TO GROUND LEVEL.

ANY DEPARTURE FROM THESE PROCEDURES MUST BE APPROVED BY THE DEPARTMENT BEFORE UNDERTAKING THE WORK.

(5) (A) THE LICENSEE SHALL NOTIFY NSW OFFICE OF WATER IF A FLOWING SUPPLY OF WATER IS OBTAINED. THE BORE SHALL THEN BE LINED WITH CASING AND CEMENTED AND A SUITABLE CLOSING GEAR SHALL BE ATTACHED TO THE BOREHEAD AS SPECIFIED BY NSW OFFICE OF WATER.

(B) IF A FLOWING SUPPLY OF WATER IS OBTAINED FROM THE WORK, THE LICENSEE SHALL ONLY DISTRIBUTE WATER FROM THE BORE HEAD BY A SYSTEM OF PIPE LINES AND SHALL NOT DISTRIBUTE IT IN DRAINS, NATURAL OR ARTIFICIAL CHANNELS OR DEPRESSIONS.

(6) IF A WORK IS ABANDONED AT ANY TIME THE LICENSEE SHALL NOTIFY NSW OFFICE OF WATER THAT THE WORK HAS BEEN ABANDONED AND SEAL OFF THE AQUIFER BY:-

(A) BACKFILLING THE WORK TO GROUND LEVEL WITH CLAY OR CEMENT AFTER WITHDRAWING THE CASING (LINING); OR

(B) SUCH METHODS AS AGREED TO OR DIRECTED BY NSW OFFICE OF WATER.

(7) THE LICENSEE SHALL NOT ALLOW ANY TAILWATER/DRAINAGE TO DISCHARGE INTO OR ONTO:-

- ANY ADJOINING PUBLIC OR CROWN ROAD;
- ANY OTHER PERSONS LAND;
- ANY CROWN LAND;
- ANY RIVER, CREEK OR WATERCOURSE;
- ANY NATIVE VEGETATION AS DESCRIBED UNDER THE NATIVE VEGETATION CONSERVATION ACT 1997;
- ANY WETLANDS OF ENVIRONMENTAL SIGNIFICANCE.

(8) WORKS USED FOR THE PURPOSE OF CONVEYING, DISTRIBUTING OR STORING WATER TAKEN BY MEANS OF THE LICENSED WORK SHALL NOT BE CONSTRUCTED OR INSTALLED SO AS TO OBSTRUCT THE REASONABLE PASSAGE OF FLOOD WATERS FLOWING INTO OR FROM A RIVER.

(9) IF THE BORE AUTHORISED BY THIS LICENSE IS LINED WITH STEEL OR PLASTIC CASING THE INSIDE DIAMETER OF THAT CASING SHALL NOT EXCEED 220 MM.

(10) WATER SHALL NOT BE PUMPED FROM THE BORE AUTHORISED BY THIS LICENSE FOR ANY PURPOSE OTHER THAN GROUNDWATER INVESTIGATION.

(11) SUBJECT TO CONDITION (12) THE LICENSEE SHALL WITHIN TWO MONTHS OF THE DATE OF COMPLETION OF THE BORE AUTHORISED BY THE LICENSE,

(1) BACKFILL IT WITH CLAY OR CEMENT TO GROUND LEVEL, AFTER WITHDRAWING ANY CASING(LINING), OR:-

(2) RENDER IT INEFFECTIVE BY ANY OTHER MEANS ACCEPTABLE TO THE DEPARTMENT.

(12) CONDITION (11) SHALL HAVE NO FORCE OR EFFECT IF:-

(1) AT THE RELEVANT TIME THERE IS WITH NSW OFFICE OF WATER, AN APPLICATION IN RESPECT OF WHICH THE DEPARTMENT HAS NOT MADE A DECISION TO CONVERT THE GROUNDWATER INVESTIGATION BORE INTO A PRODUCTION BORE; OR

(2) THE LICENSEE HAS COMPLETED THE BORE FOR THE PURPOSE OF MEASURING WATER LEVELS OR WATER QUALITY BY THE ADDITION OF CASING WITH A DIAMETER NOT EXCEEDING 220MM.

End Of Conditions

NSW Office of Water

Sydney South Coast Region
Locked Bag 5123
Level 11, 10 Valentine Avenue
Parramatta NSW 2124
Phone: (18) 00353104

BORE LICENSE CERTIFICATE UNDER SECTION 115 OF THE WATER ACT, 1912

10BL605798



Martin, Glin
16 Bay Rd
Arcadia NSW 2159

LICENSE NUMBER
10BL605798
DATE LICENSE VALID FROM
29-Aug-2016
DATE LICENSE VALID TO
PERPETUITY
FEE
\$0.00

ABN 72189919072 GST NIL

LOCATION OF WORKS

Portion(s) of Lot/Section/DP
2/312327

PARISH
Maroota

COUNTY
Cumberland

MW10

TYPE OF WORKS

Bore

PURPOSE(S) FOR WHICH WATER MAY BE USED

Monitoring Bore

CONDITIONS APPLYING TO THIS LICENSE ARE

As shown on the attached Condition Statement

ORIGINAL

NSW Office of Water

CONDITIONS STATEMENT REFERRED TO ON 10BL605798 ISSUED UNDER PART V OF THE WATER ACT, 1912 ON 29-Aug-2016

(1) THE LICENCE SHALL LAPSE IF THE WORK IS NOT COMMENCED AND COMPLETED WITHIN THREE YEARS OF THE DATE OF THE ISSUE OF THE LICENCE.

(2) THE LICENSEE SHALL WITHIN TWO MONTHS OF COMPLETION OR AFTER THE ISSUE OF THE LICENSE IF THE WORK IS EXISTING, FURNISH TO NSW OFFICE OF WATER:-

(A) DETAILS OF THE WORK SET OUT IN THE ATTACHED FORM "A" (MUST BE COMPLETED BY A DRILLER).

(B) A PLAN SHOWING ACCURATELY THE LOCATION OF THE WORK, IN RELATION TO PORTION AND PROPERTY BOUNDARIES.

(C) A ONE LITRE WATER SAMPLE FOR ALL LICENCES OTHER THAN THOSE FOR STOCK, DOMESTIC, TEST BORES AND FARMING PURPOSES.

(D) DETAILS OF ANY WATER ANALYSIS AND/OR PUMPING TESTS.

(3) THE LICENSEE SHALL ALLOW NSW OFFICE OF WATER OR ANY PERSON AUTHORISED BY IT, FULL AND FREE ACCESS TO THE WORKS, EITHER DURING OR AFTER CONSTRUCTION, FOR THE PURPOSE OF CARRYING OUT INSPECTION OR TEST OF THE WORKS AND ITS FITTINGS AND SHALL CARRY OUT ANY WORK OR ALTERATIONS DEEMED NECESSARY BY THE DEPARTMENT FOR THE PROTECTION AND PROPER MAINTENANCE OF THE WORKS, OR THE CONTROL OF THE WATER EXTRACTED AND FOR THE PROTECTION OF THE QUALITY AND THE PREVENTION FROM POLLUTION OR CONTAMINATION OF SUB-SURFACE WATER.

(4) IF DURING THE CONSTRUCTION OF THE WORK, SALINE OR POLLUTED WATER IS ENCOUNTERED ABOVE THE PRODUCING AQUIFER, SUCH WATER SHALL BE SEALED OFF BY:-

(A) INSERTING THE APPROPRIATE LENGTH(S) OF CASING TO A DEPTH SUFFICIENT TO EXCLUDE THE SALINE OR POLLUTED WATER FROM THE WORK.

(B) CEMENTING BETWEEN THE CASING(S) AND THE WALLS OF THE BORE HOLE FROM THE BOTTOM OF THE CASING TO GROUND LEVEL.

ANY DEPARTURE FROM THESE PROCEDURES MUST BE APPROVED BY THE DEPARTMENT BEFORE UNDERTAKING THE WORK.

(5) (A) THE LICENSEE SHALL NOTIFY NSW OFFICE OF WATER IF A FLOWING SUPPLY OF WATER IS OBTAINED. THE BORE SHALL THEN BE LINED WITH CASING AND CEMENTED AND A SUITABLE CLOSING GEAR SHALL BE ATTACHED TO THE BOREHEAD AS SPECIFIED BY NSW OFFICE OF WATER.

(B) IF A FLOWING SUPPLY OF WATER IS OBTAINED FROM THE WORK, THE LICENSEE SHALL ONLY DISTRIBUTE WATER FROM THE BORE HEAD BY A SYSTEM OF PIPE LINES AND SHALL NOT DISTRIBUTE IT IN DRAINS, NATURAL OR ARTIFICIAL CHANNELS OR DEPRESSIONS.

(6) IF A WORK IS ABANDONED AT ANY TIME THE LICENSEE SHALL NOTIFY NSW OFFICE OF WATER THAT THE WORK HAS BEEN ABANDONED AND SEAL OFF THE AQUIFER BY:-

(A) BACKFILLING THE WORK TO GROUND LEVEL WITH CLAY OR CEMENT AFTER WITHDRAWING THE CASING (LINING); OR

(B) SUCH METHODS AS AGREED TO OR DIRECTED BY NSW OFFICE OF WATER.

(7) THE LICENSEE SHALL NOT ALLOW ANY TAIL WATER/DRAINAGE TO DISCHARGE INTO OR ONTO:-

- ANY ADJOINING PUBLIC OR CROWN ROAD;
- ANY OTHER PERSONS LAND;
- ANY CROWN LAND;
- ANY RIVER, CREEK OR WATERCOURSE;
- ANY NATIVE VEGETATION AS DESCRIBED UNDER THE NATIVE VEGETATION CONSERVATION ACT 1997;
- ANY WETLANDS OF ENVIRONMENTAL SIGNIFICANCE.

(8) WORKS USED FOR THE PURPOSE OF CONVEYING, DISTRIBUTING OR STORING WATER TAKEN BY MEANS OF THE LICENSED WORK SHALL NOT BE CONSTRUCTED OR INSTALLED SO AS TO OBSTRUCT THE REASONABLE PASSAGE OF FLOOD WATERS FLOWING INTO OR FROM A RIVER.

(9) IF THE BORE AUTHORISED BY THIS LICENSE IS LINED WITH STEEL OR PLASTIC CASING THE INSIDE DIAMETER OF THAT CASING SHALL NOT EXCEED 220 MM.

(10) WATER SHALL NOT BE PUMPED FROM THE BORE AUTHORISED BY THIS LICENSE FOR ANY PURPOSE OTHER THAN GROUNDWATER INVESTIGATION.

(11) SUBJECT TO CONDITION (12) THE LICENSEE SHALL WITHIN TWO MONTHS OF THE DATE OF COMPLETION OF THE BORE AUTHORISED BY THE LICENSE,

(1) BACKFILL IT WITH CLAY OR CEMENT TO GROUND LEVEL, AFTER WITHDRAWING ANY CASING(LINING), OR:-

(2) RENDER IT INEFFECTIVE BY ANY OTHER MEANS ACCEPTABLE TO THE DEPARTMENT.

(12) CONDITION (11) SHALL HAVE NO FORCE OR EFFECT IF:-

(1) AT THE RELEVANT TIME THERE IS WITH NSW OFFICE OF WATER, AN APPLICATION IN RESPECT OF WHICH THE DEPARTMENT HAS NOT MADE A DECISION TO CONVERT THE GROUNDWATER INVESTIGATION BORE INTO A PRODUCTION BORE; OR

(2) THE LICENSEE HAS COMPLETED THE BORE FOR THE PURPOSE OF MEASURING WATER LEVELS OR WATER QUALITY BY THE ADDITION OF CASING WITH A DIAMETER NOT EXCEEDING 220MM.

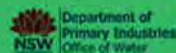
End Of Conditions

NSW Office of Water

Sydney South Coast Region
Locked Bag 5123
Level 11, 10 Valentine Avenue
Parramatta NSW 2124
Phone: (18) 00353104

BORE LICENSE CERTIFICATE UNDER SECTION 115 OF THE WATER ACT, 1912

10BL605799



Martin, Leonard Stanley
16 Bay St
Arcadia NSW 2159

LICENSE NUMBER
10BL605799
DATE LICENSE VALID FROM
29-Aug-2016
DATE LICENSE VALID TO
PERPETUITY
FEE
\$0.00

ABN 72189919072 GST NIL

LOCATION OF WORKS

Portion(s) or Lot/Section/DP

2//228308

PARISH

Maroota

COUNTY

Cumberland

MW7, 12

TYPE OF WORKS

Bore

PURPOSE(S) FOR WHICH WATER MAY BE USED

Monitoring Bore

CONDITIONS APPLYING TO THIS LICENSE ARE

As shown on the attached Condition Statement

ORIGINAL

NSW Office of Water

**CONDITIONS STATEMENT REFERRED TO ON
10BL605799
ISSUED UNDER PART V OF THE WATER ACT, 1912
ON 29-Aug-2016**

- (1) THE LICENCE SHALL LAPSE IF THE WORK IS NOT COMMENCED AND COMPLETED WITHIN THREE YEARS OF THE DATE OF THE ISSUE OF THE LICENCE.
- (2) THE LICENSEE SHALL WITHIN TWO MONTHS OF COMPLETION OR AFTER THE ISSUE OF THE LICENSE IF THE WORK IS EXISTING, FURNISH TO NSW OFFICE OF WATER:-
- (A) DETAILS OF THE WORK SET OUT IN THE ATTACHED FORM "A" (MUST BE COMPLETED BY A DRILLER).
- (B) A PLAN SHOWING ACCURATELY THE LOCATION OF THE WORK, IN RELATION TO PORTION AND PROPERTY BOUNDARIES.
- (C) A ONE LITRE WATER SAMPLE FOR ALL LICENCES OTHER THAN THOSE FOR STOCK, DOMESTIC, TEST BORES AND FARMING PURPOSES.
- (D) DETAILS OF ANY WATER ANALYSIS AND/OR PUMPING TESTS.
- (3) THE LICENSEE SHALL ALLOW NSW OFFICE OF WATER OR ANY PERSON AUTHORISED BY IT, FULL AND FREE ACCESS TO THE WORKS, EITHER DURING OR AFTER CONSTRUCTION, FOR THE PURPOSE OF CARRYING OUT INSPECTION OR TEST OF THE WORKS AND ITS FITTINGS AND SHALL CARRY OUT ANY WORK OR ALTERATIONS DEEMED NECESSARY BY THE DEPARTMENT FOR THE PROTECTION AND PROPER MAINTENANCE OF THE WORKS, OR THE CONTROL OF THE WATER EXTRACTED AND FOR THE PROTECTION OF THE QUALITY AND THE PREVENTION FROM POLLUTION OR CONTAMINATION OF SUB-SURFACE WATER.
- (4) IF DURING THE CONSTRUCTION OF THE WORK, SALINE OR POLLUTED WATER IS ENCOUNTERED ABOVE THE PRODUCING AQUIFER, SUCH WATER SHALL BE SEALED OFF BY:-
- (A) INSERTING THE APPROPRIATE LENGTH(S) OF CASING TO A DEPTH SUFFICIENT TO EXCLUDE THE SALINE OR POLLUTED WATER FROM THE WORK.
- (B) CEMENTING BETWEEN THE CASING(S) AND THE WALLS OF THE BORE HOLE FROM THE BOTTOM OF THE CASING TO GROUND LEVEL.
- ANY DEPARTURE FROM THESE PROCEDURES MUST BE APPROVED BY THE DEPARTMENT BEFORE UNDERTAKING THE WORK.
- (5) (A) THE LICENSEE SHALL NOTIFY NSW OFFICE OF WATER IF A FLOWING SUPPLY OF WATER IS OBTAINED. THE BORE SHALL THEN BE LINED WITH CASING AND CEMENTED AND A SUITABLE CLOSING GEAR SHALL BE ATTACHED TO THE BOREHEAD AS SPECIFIED BY NSW OFFICE OF WATER.
- (B) IF A FLOWING SUPPLY OF WATER IS OBTAINED FROM THE WORK, THE LICENSEE SHALL ONLY DISTRIBUTE WATER FROM THE BORE HEAD BY A SYSTEM OF PIPE LINES AND SHALL NOT DISTRIBUTE IT IN DRAINS, NATURAL OR ARTIFICIAL CHANNELS OR DEPRESSIONS.
- (6) IF A WORK IS ABANDONED AT ANY TIME THE LICENSEE SHALL NOTIFY NSW OFFICE OF WATER THAT THE WORK HAS BEEN ABANDONED AND SEAL OFF THE AQUIFER BY:-
- (A) BACKFILLING THE WORK TO GROUND LEVEL WITH CLAY OR CEMENT AFTER WITHDRAWING THE CASING (LINING); OR
- (B) SUCH METHODS AS AGREED TO OR DIRECTED BY NSW OFFICE OF WATER.

(7) THE LICENSEE SHALL NOT ALLOW ANY TAILWATER/DRAINAGE TO DISCHARGE INTO OR ONTO:-

- ANY ADJOINING PUBLIC OR CROWN ROAD;
- ANY OTHER PERSONS LAND;
- ANY CROWN LAND;
- ANY RIVER, CREEK OR WATERCOURSE;
- ANY NATIVE VEGETATION AS DESCRIBED UNDER THE NATIVE VEGETATION CONSERVATION ACT 1997;
- ANY WETLANDS OF ENVIRONMENTAL SIGNIFICANCE.

(8) WORKS USED FOR THE PURPOSE OF CONVEYING, DISTRIBUTING OR STORING WATER TAKEN BY MEANS OF THE LICENSED WORK SHALL NOT BE CONSTRUCTED OR INSTALLED SO AS TO OBSTRUCT THE REASONABLE PASSAGE OF FLOOD WATERS FLOWING INTO OR FROM A RIVER.

(9) IF THE BORE AUTHORISED BY THIS LICENSE IS LINED WITH STEEL OR PLASTIC CASING THE INSIDE DIAMETER OF THAT CASING SHALL NOT EXCEED 220 MM.

(10) WATER SHALL NOT BE PUMPED FROM THE BORE AUTHORISED BY THIS LICENSE FOR ANY PURPOSE OTHER THAN GROUNDWATER INVESTIGATION.

(11) SUBJECT TO CONDITION (12) THE LICENSEE SHALL WITHIN TWO MONTHS OF THE DATE OF COMPLETION OF THE BORE AUTHORISED BY THE LICENSE,

(1) BACKFILL IT WITH CLAY OR CEMENT TO GROUND LEVEL, AFTER WITHDRAWING ANY CASING(LINING), OR:-

(2) RENDER IT INEFFECTIVE BY ANY OTHER MEANS ACCEPTABLE TO THE DEPARTMENT.

(12) CONDITION (11) SHALL HAVE NO FORCE OR EFFECT IF:-

(1) AT THE RELEVANT TIME THERE IS WITH NSW OFFICE OF WATER, AN APPLICATION IN RESPECT OF WHICH THE DEPARTMENT HAS NOT MADE A DECISION TO CONVERT THE GROUNDWATER INVESTIGATION BORE INTO A PRODUCTION BORE; OR

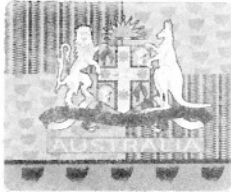
(2) THE LICENSEE HAS COMPLETED THE BORE FOR THE PURPOSE OF MEASURING WATER LEVELS OR WATER QUALITY BY THE ADDITION OF CASING WITH A DIAMETER NOT EXCEEDING 220MM.

End Of Conditions

Pumping Bore Licence

BOX 1W
(A1845103)

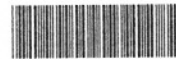
COPY



NEW SOUTH WALES

CERTIFICATE OF TITLE

WATER MANAGEMENT ACT, 2000



WAL TITLE REFERENCE

WAL24163

EDITION

1

DATE OF ISSUE

1/9/2014

CERTIFICATE AUTHENTICATION CODE

MP27-QV-7HVV



This certificate is issued under s87B of the Water Management Act, 2000.

WARNING NOTE: INFORMATION ON THIS REGISTER IS NOT GUARANTEED

TENURE TYPE: CONTINUING

PT84PB1

HOLDER(S)

LEONARD STANLEY MARTIN

(DW AG357440)

ENCUMBRANCES

1. TERM TRANSFER: NIL

ACCESS LICENCE DETAILS

CATEGORY: AQUIFER

SHARE COMPONENT:

SHARE - 45 UNITS

WATER SOURCE - MAROOTA TERTIARY SANDS GROUNDWATER SOURCE

WATER SHARING PLAN - GREATER METROPOLITAN REGION GROUNDWATER SOURCES

EXTRACTION COMPONENT:

TIMES/RATES/CIRCUMSTANCES - SUBJECT TO THE CONDITIONS OF THE WATER

ACCESS LICENCE

EXTRACTION FROM - AQUIFER

EXTRACTION ZONE - WHOLE WATER SOURCE

NOMINATED WORKS:

WORK APPROVAL NUMBER(S) - 10WA114817

INTERSTATE TAGGING ZONE - NIL

CONDITIONS

LICENCE CONDITIONS FORM A PART OF THIS LICENCE AND AFFECT THE SHARE AND EXTRACTION COMPONENTS. CONDITION STATEMENTS ARE AVAILABLE FROM THE NSW OFFICE OF WATER (NOW).

NOTES

A WATER LICENCE INFORMATION SHEET IS AVAILABLE FROM THE NSW OFFICE OF WATER (NOW) AND SHOULD BE REFERRED TO IN INTERPRETING THIS LICENCE. NOW WEBSITE WWW.WATER.NSW.GOV.AU, PHONE 1800 353 104, EMAIL INFORMATION@WATER.NSW.GOV.AU
NOW REFERENCE NUMBER: 10AL114816
PREVIOUS WATER ACT LICENCE NUMBER(S): 10PT901430, 10BL159748.

**** END OF CERTIFICATE ****

ANY ATTEMPT TO ALTER THIS CERTIFICATE COULD RESULT IN HEAVY FINES OR IMPRISONMENT (S.141 REAL PROPERTY ACT).

Information about a water licence or approval

Use this tool to search for information about water licences and approvals issued under the *Water Act 1912* or *Water Management Act 2000*.

Select the type of licence or approval and enter the licence or approval number:

- **Water access licence (WAL):** a WAL number starts with the letters 'WAL' followed by several numbers; a WAL also has a reference number that starts with a two digit number, followed by 'AL' and then several numbers.
- **1912 water licence:** a water licence number starts with a two digit number, followed by a two letter code and then several numbers. Note: a PT reference number cannot be entered.
- **Approval:** an approval number starts with a two digit number, followed by a two letter code (WA, UA, CA or FW) and then several numbers.

Search for information about either a:

- ☐ Water access licence (WAL) issued under the *Water Management Act 2000*
- ☐ Approval issued under the *Water Management Act 2000*

Find out if a *Water Act 1912* licence has been converted

☒ Water licence conversion status

Water Licence Number

Notes:

Water Act 1912 licences and authorities are being converted to water access licences and approvals under the *Water Management Act 2000* as water sharing plans commence (see [licence conversion](#)).

If a *Water Act 1912* licence has been converted, the search results will display the water access licences and approvals that have been created. Water access licences are registered in the [Water Access Licence Register](#) administered by Land and Property Information. Those water access licences that do not display a WAL number in the search results are still to have their licence details confirmed and completed.

Due to privacy laws very little information on *Water Act 1912* licence and authorities can be made freely available. Full information for a particular licence or authority can be obtained if required for conveyancing by applying to the NSW Office of Water. See [legal searches for water related interests](#).

<< Previous Search

Print Export

Search Results

Access licenses created for '10BL159748'

WAL No.	Water Source					Status
24163	Maroota Tertiary Sands Groundwater Source					Current
Category [Subcategory]	Status	Water Source	Tenure Type	Management Zone	Share Components (units or ML)	
Aquifer	Current	Maroota Tertiary Sands Groundwater Source	Continuing		45.00	

Extraction Times or Rates

Subject to conditions water may be taken at any time or rate

Nominated Work Approval(s)

10WA114817

- Conditions

Plan Conditions

Water sharing plan

Greater Metropolitan Region Groundwater Sources

Take of water

- MW0929-00001 From 1 July 2018, if the water supply work nominated on this access licence is located at or less than 40 m from the top of the high bank of a river then:
 A. water must not be taken in this groundwater source when flows are in the Very Low Flow Class for an unregulated river access licence in that river.
 B. This restriction will only apply when the system that confirms when water can be taken is available on DPI Water website.
 C. DPI Water will inform the licence holder in writing of the applicable restrictions and how to access the information on its website when this system becomes operative.
- MW0604-00001 Water allocations remaining in the account for this access licence must not be carried over from one water year to the next water year.
- MW0605-00001 Water must be taken in compliance with the conditions of the approval for the nominated work on this access licence through which water is to be taken.
- MW0603-00001 The total volume of water taken under this access licence in any water year must not exceed a volume equal to:
 A. the sum of water in the account from the available water determination for the current year, plus
 B. the net amount of water assigned to or from the account under a water allocation assignment, plus
 C. any water re-credited by the Minister to the account.

Monitoring and recording

- MW2338-00001 The completed logbook must be retained for five (5) years from the last date recorded in the logbook.
- MW2336-00001 The purpose or purposes for which water is taken, as well as details of the type of crop, area cropped, and dates of planting and harvesting, must be recorded in the logbook each time water is taken.

- MW2337-00001 The following information must be recorded in the logbook for each period of time that water is taken:
 A. date, volume of water, start and end time when water was taken as well as the pump capacity per unit of time, and
 B. the access licence number under which the water is taken, and
 C. the approval number under which the water is taken, and
 D. the volume of water taken for domestic consumption and/or stock watering.
- MW0606-00001 The volume of water taken in the water year must be recorded in the logbook at the end of each water year. The maximum volume of water permitted to be taken in that water year must also be recorded in the logbook.
- MW2339-00001 A logbook must be kept, unless the work is metered and fitted with a data logger. The logbook must be produced for inspection when requested by DPI Water.
- Reporting**
- MW0051-00002 Once the licence holder becomes aware of a breach of any condition on this access licence, the licence holder must notify the Minister as soon as practicable. The Minister must be notified by:
 A. email: water.enquiries@dpi.nsw.gov.au,
 or
 B. telephone: 1800 353 104. Any notification by telephone must also be confirmed in writing within seven (7) business days of the telephone call.

Other Conditions

NIL

Approvals created for '10BL159748'

Approval No.	Water Source	Status
10WA114817	Maroota Tertiary Sands Groundwater Source	Current

Kind of Approval	Issue Date	Expiry Date	Approval Number	Status	Water Source
Water Supply Works	01-JUL-2011	14-JUN-2025	10WA114817	Current	Maroota Tertiary Sands Groundwater Source
Work Type		Description	No of Works	Location (Lot/DP)	
Extraction Works Gw		Bore	1	Lot 1, DP 228308	

Water Access Licences nominating these works

Reference Number	WAL Number
10AL114816	24163

- Conditions

Plan Conditions

Water sharing plan	Greater Metropolitan Region Groundwater Sources
--------------------	---

Take of water

MW0655-00001 Any water supply work authorised by this approval must take water in compliance with the conditions of the access licence under which water is being taken.

Water management works

MW0097-00001 If contaminated water is found above the production aquifer during the construction of the water supply work authorised by this approval, the licensed driller must:
 A. notify DPI Water in writing within 48 hours of becoming aware of the contaminated water, and
 B. adhere to the Minimum Construction Requirements for Water Bores in Australia (2012), as amended or replaced from time to time.

MW0487-00001 The water supply work authorised by this approval must be constructed within three (3) years from the date this approval is granted.

MW0044-00001 When a water supply work authorised by this approval is to be abandoned or replaced, the approval holder must contact DPI Water in writing to verify whether the work must be decommissioned.

The work is to be decommissioned, unless the approval holder receives notice from the Minister not to do so.

When decommissioning the work the approval holder must:

- A. comply with the minimum requirements for decommissioning bores prescribed in the Minimum Construction Requirements for Water Bores in Australia (2012), as amended or replaced from time to time, and
- B. notify DPI Water in writing within sixty (60) days of decommissioning that the work has been decommissioned.

Monitoring and recording

MW0481-00001 A logbook must be kept and maintained at the authorised work site or on the property for each water supply work authorised by this approval, unless the work is metered and fitted with a data logger.

MW0482-00001 Where a water meter is installed on a water supply work authorised by this approval, the meter reading must be recorded in the logbook before taking water. This reading must be recorded every time water is to be taken.

Reporting

MW0051-00001 Once the approval holder becomes aware of a breach of any condition on this approval, the approval holder must notify the Minister as soon as practicable. The Minister must be notified by:

A. email: water.enquiries@dpi.nsw.gov.au,
or

B. telephone: 1800 3 53 104. Any notification by telephone must also be confirmed in writing within seven (7) business days of the telephone call.

MK0485-00001 Within sixty (60) days of completing construction of the water supply work authorised by this approval, the approval holder must provide a completed Form A for that work to DPI Water.

Other Conditions**Take of water**

DK0316-00128 The approval holder must not take water from the approved work at a rate that exceeds 3.0 L/second.

Water management works

DK1363-00001	The approval holder must not construct or install works used for the purpose of conveying, distributing or storing water from the works authorised by this approval, that obstruct the reasonable passage of floodwaters flowing in, to, or from a river or lake.
DK1202-00001	The approval holder must allow DPI Water or any person authorised by it, full and free access to the approved works, either during or after construction, for the purpose of carrying out inspection or test of the approved works and its fittings and must carry out any work or alterations deemed necessary by the department for the protection or proper maintenance of the approved works, or the control of the water extracted and for the protection of the quality and the prevention from pollution or contamination of sub-surface water.

Land to which the converted entitlement previously related.

Lot/DP	Description
Lot 1, DP 228308	Work Location
Lot 1, DP 228308	Land Benefited
Lot 2, DP 228308	Land Benefited
Lot 2, DP 312327	Land Benefited

Disclaimer: The NSW Office of Water does not warrant the data is current nor does it warrant that the data or the data capturing processes are free from corruption or error.

Privacy: The information provided is limited to meet the requirements of section 57 of the *Privacy and Personal Information Act 1998*.

Exporting and printing: Search results show a maximum of 50 rows per page. Search results can only be printed page by page.

More information: Should you require further information or technical assistance, please submit your request to water.enquiries@dpi.nsw.gov.au or contact 1800 353 104.

Dam Licences

Information about a water licence or approval

Use this tool to search for information about water licences and approvals issued under the Water Act 1912 or Water Management Act 2000.

Select the type of licence or approval and enter the licence or approval number:

- Water access licence (WAL): a WAL number starts with the letters 'WAL' followed by several numbers; a WAL also has a reference number that starts with a two digit number, followed by 'AL' and then several numbers.
- 1912 water licence: a water licence number starts with a two digit number, followed by a two letter code and then several numbers. Note: a PT reference number cannot be entered.
- Approval: an approval number starts with a two digit number, followed by a two letter code (WA, UA, CA or FW) and then several numbers.

Search for information about either a:

☒ Water access licence (WAL) issued under the Water Management Act 2000

Water Access Licence (WAL) Number

WAL 26163

A WAL number starts with the letters 'WAL' followed by several numbers

Can't find your WAL number? Do you have a reference number? A reference number starts with a two digit number, followed by 'AL' and then several numbers. Use the following tool to find your WAL by entering your reference number. [Enter the reference number to find the WAL number.](#)

Notes:

The search results will list the conditions imposed on the water access licence. Any approved water supply work/s nominated on the water access licence are identified by the approval number/s for the work/s.

The information about a water access licence provided in the search results is a summary and may not always be up to date. If you require full and up to date details about a particular water access licence (including current holders, share and extraction component details, encumbrances and notations) you should search the [Water Access Licence Register](#) administered by Land and Property Information.

☐ Water Act 1912 Licences and Authorities

☐ Approval issued under the Water Management Act 2000

Find out if a Water Act 1912 licence has been converted

☐ Water licence conversion status

« Previous Search

Print Export

Search Results

Category [Subcategory]	Status	Water Source	Tenure Type	Management Zone	Share Components (units or ML)
---------------------------	--------	--------------	----------------	-----------------	--------------------------------------

Unregulated River	Current	Hawkesbury And Lower Nepean Rivers Water Source	Continuing	Lower Hawkesbury River Management Zone	264.00
-------------------	---------	---	------------	--	--------

Extraction Times or Rates

Subject to conditions water may be taken at any time or rate

Nominated Work Approval(s)

10CA104888

- Conditions

Plan Conditions

Water sharing plan	Greater Metropolitan Region Unregulated River Water Sources
--------------------	---

Take of water

- | | |
|--------------|---|
| MW0112-00001 | <p>The maximum water allocation that may be carried over in the account for this access licence from one water year to the next water year is:</p> <p>A. a volume equal to 100 % of the share component of the licence, or</p> <p>B. 1 ML/unit share of the share component of the licence.</p> |
| MW0036-00002 | <p>The volume of water taken in any three (3) consecutive water years from 1 July 2012 must be recorded in the logbook at the end of those three water years. The maximum volume of water permitted to be taken in those years must also be recorded in the logbook.</p> |
| MW0605-00001 | <p>Water must be taken in compliance with the conditions of the approval for the nominated work on this access licence through which water is to be taken.</p> |
| MW0670-00001 | <p>Water must only be taken if there is visible flow in the water source at the location where water is to be taken.</p> <p>This restriction does not apply if water is to be taken:</p> <p>A. from an off-river pool, an in-river pool, a runoff harvesting dam or an in-river dam pool, or</p> <p>B. from the following Weirs: Maldon, Douglas Park, Menangle, Camden, Sharpes, Cobbity, Mount Hunter Rivulet, Brownlow Hill, Theresa Park and Wallacia.</p> |
| MW0013-00002 | <p>A. Water must not be taken from the Lower Hawkesbury River Management Zone of Hawkesbury and Lower Nepean Rivers Water Source when flows are in the Very Low Flow Class.</p> <p>B. This restriction will only apply when the system that confirms when water can be taken is available on the relevant licensor website.</p> <p>C. the relevant licensor will inform the licence holder in writing of the applicable restrictions and how to access the information on its website when this system becomes operative.</p> <p>This restriction does not apply if water is to be taken from a runoff harvesting dam or an in-river dam pool.</p> |
| MW0004-00002 | <p>From 1 July 2012, the total volume of water taken in any three (3) consecutive water years under this access licence must not exceed a volume which is equal to the lesser of either:</p> <p>A. the sum of:</p> <ul style="list-style-type: none"> i. water in the account from the available water determinations in those 3 consecutive water years, plus ii. water in the account carried over from the water year prior to those 3 consecutive water years, plus iii. any net amount of water assigned to or from this account under a water allocation assignment in those 3 consecutive water years, plus iv. any water re-credited by the Minister to the account in those 3 consecutive water years, <p>or</p> |

- B. the sum of:
- i. the share component of this licence at the beginning of the first year in those 3 consecutive water years, plus
 - ii. the share component of this licence at the beginning of the second year in those 3 consecutive water years, plus
 - iii. the share component of this licence at the beginning of the third year in those 3 consecutive water years, plus
 - iv. any net amount of water assigned to or from this account under a water allocation assignment in those 3 consecutive water years, plus
 - v. any water re-credited by the Minister to the account in those 3 consecutive water years.

Monitoring and recording

MW2338-00001

The completed logbook must be retained for five (5) years from the last date recorded in the logbook.

MW2337-00001

The following information must be recorded in the logbook for each period of time that water is taken:

- A. date, volume of water, start and end time when water was taken as well as the pump capacity per unit of time, and
- B. the access licence number under which the water is taken, and
- C. the approval number under which the water is taken, and
- D. the volume of water taken for domestic consumption and/or stock watering.

MW2339-00001

A logbook must be kept, unless the work is metered and fitted with a data logger. The logbook must be produced for inspection when requested by the relevant licensor.

Reporting

MW0051-00002

Once the licence holder becomes aware of a breach of any condition on this access licence, the licence holder must notify the Minister as soon as practicable. The Minister must be notified by:

- A. email: water.enquiries@dpi.nsw.gov.au, or
- B. telephone: 1800 353 104. Any notification by telephone must also be confirmed in writing within seven (7) business days of the telephone call.

Other Conditions

NIL

Disclaimer: The NSW Office of Water does not warrant the data is current nor does it warrant that the data or the data capturing processes are free from corruption or error.

Privacy: The information provided is limited to meet the requirements of section 57 of the Privacy and Personal Information Act 1998.

Exporting and printing: Search results show a maximum of 50 rows per page. Search results can only be printed page by page.

More information: Should you require further information or technical assistance, please submit your request to water.enquiries@dpi.nsw.gov.au or contact 1800 353 104.

Approval details

Approval number	10CA104888
Status	CURRENT*
Approval kind	Water Supply Works Water Use
Water sharing plan	GREATER METROPOLITAN REGION UNREGULATED RIVER WATER SOURCES
Date of effect	01/Jul/2011
Expiry date	16/Feb/2026
Approval holder(s)	Schedule 1
Water supply works	Schedule 2
Water use	Schedule 3
Conditions	Schedule 4

Contact for service of documents

Name	Martin, Leonard Stanley
Address	16 Bay Rd ARCADIA NSW 2159

* Note: An approval has effect for such period as is specified in the approval, or if the period is extended under section 105, that extended period. If an application for extension of an approval is lodged before the approval expires, the term of the expiring approval is extended until either the date of the final decision on the application, or a date fixed by the Minister for the approval, whichever is the later date. An approval which has expired can be the subject of an application to extend it but it needs to be accompanied by a statutory declaration of the reasons for the delay in making the application. If the Minister accepts these reasons the term of the approval is taken to have been extended, and the application may be dealt with, as if the application had been made before the approval expired.

It is an offence under the Water Management Act 2000 to breach a term or condition of the approval or to construct and use works to which the approval does not relate. It is also an offence to use works the subject of an approval if the approval has expired, been surrendered or cancelled.

Schedule 1 - Approval holders

The holders of this approval are:

Approval holder(s)

ACN (if applicable)

Leonard Stanley Martin

Maroota Super Fund Pty Ltd

Important notice - change of landholder or contact

Please advise the Office in the event of any of the following, as soon as practicable:

- If there is a change in the ownership or occupation of the land benefited by this approval (see Schedule 2). Under the Water Management Act 2000, an approval is typically held by the owner or lawful occupier of the benefited land. Consequently, a change in occupation may cause a change in your legal obligations as an approval holder.*
- If there is a change to the contact person. You will be required to lodge a written statement signed by all the holders.*
- If there is a change to the mailing address for the nominated contact person. This should be done by the contact person in writing.

** An updated Statement of Approval will be issued free of charge*

Schedule 2 - Water supply works

Part A: Authorised water supply works

Subject to the conditions of this approval, in relation to each numbered work in the table, the holders of this approval are authorised to construct and use a water supply work of the type shown at the location specified:

Work 1

Specified work	BYWASH DAM x 2	
Specified location	2//228308	Whole Lot
Management zone (if applicable)	LOWER HAWKESBURY RIVER MANAGEMENT ZONE	
Water source	HAWKESBURY AND LOWER NEPEAN RIVERS WATER SOURCE	
Water sharing plan	GREATER METROPOLITAN REGION UNREGULATED RIVER WATER SOURCES	

Work 2

Specified work	65MM CENTRIFUGAL PUMP x 2	
Specified location	2//228308	Whole Lot
Management zone (if applicable)	LOWER HAWKESBURY RIVER MANAGEMENT ZONE	
Water source	HAWKESBURY AND LOWER NEPEAN RIVERS WATER SOURCE	
Water sharing plan	GREATER METROPOLITAN REGION UNREGULATED RIVER WATER SOURCES	

Schedule 3 - Water Use

Subject to the conditions of this approval, the holder(s) of this approval is authorised to use water for the following purpose(s) and location(s):

Purpose 1

Specified purpose

IRRIGATION

Specified location

1//228308
2//228308

Schedule 4 - Conditions

The approval is subject to the following conditions:

Plan conditions

Water sharing plan

Greater Metropolitan Region Unregulated River Water Sources

Take of water

MW0655-00001

Any water supply work authorised by this approval must take water in compliance with the conditions of the access licence under which water is being taken.

Water management works

MW0491-00001

When a water supply work authorised by this approval is to be abandoned or replaced, the approval holder must contact DPI Water in writing to verify whether the work must be decommissioned.

The work is to be decommissioned, unless the approval holder receives notice from the Minister not to do so.

Within sixty (60) days of decommissioning, the approval holder must notify DPI Water in writing that the work has been decommissioned.

Monitoring and recording

MW0481-00001

A logbook must be kept and maintained at the authorised work site or on the property for each water supply work authorised by this approval, unless the work is metered and fitted with a data logger.

MW2338-00001

The completed logbook must be retained for five (5) years from the last date recorded in the logbook.

MW0482-00001

Where a water meter is installed on a water supply work authorised by this approval, the meter reading must be recorded in the logbook before taking water. This reading must be recorded every time water is to be taken.

Reporting

MW0051-00001

Once the approval holder becomes aware of a breach of any condition on this approval, the approval holder must notify the Minister as soon as practicable. The Minister must be notified by:

A. email: water.enquiries@dpi.nsw.gov.au,

or

B. telephone: 1800 353 104. Any notification by telephone must also be confirmed in writing within seven (7) business days of the telephone call.

Other conditions**Water management works**

DS2349-00001

The approval holder must make all reasonable efforts not to allow any used water to discharge, by any means including surface or subsurface drains or pipes, into or onto:

- any adjoining public or crown road;
- any other person's land;
- any Crown land;
- any river, creek or watercourse or aquifer.

DK0888-00001

Any water supply work authorised by this approval used for the purpose of conveying, diverting or storing water must be constructed or installed to allow free passage of floodwaters flowing into or from a river or lake.

DK0871-00001

The water supply work authorised by this approval must be constructed and maintained in a way that will:

A. ensure the work's safe construction and operation, and

B. prevent the possibility of damage being caused by the work, or resulting from the work, to any public or private interest.

DK0878-00001

A. The construction, installation or use of the water supply work authorised by this approval must not cause or increase erosion to the channel or bank of the watercourse.

B. If erosion is observed, the area must be stabilised with grass cover, stone pitching or any other material that will prevent any further occurrence of erosion.

DK1217-00001

The location of the dam(s) as shown on a plan retained in the office of DPI Water shall not be altered.

DK0261-00571

When a flow is entering the storage of the dam, the pipe must be operated so as to maintain a flow in the watercourse downstream of the said dam equivalent to the flow entering the storage of the dam for the time being or the capacity of the said pipe, whichever is the lesser.

DK0243-00224

When a flow is entering the storage of the dam the pipe shall be so operated as to maintain a flow in the watercourse downstream of the said dam equivalent to the flow entering the storage of the dam for the time being or the capacity of the said pipe, which ever is the lesser.

Additional conditions

NS17761

The level of the crest of the bywash of the upstream dam on the Unnamed Watercourse shall be fixed at not higher than 6.90 m above the level of a bench mark established on a concrete weir below the upstream dam of the watercourse near the work and particulars of which are retained in the office of DPI Water.

NS17762

A pipe with a diameter of not less than 50 mm, fitted with a stop valve or other control device, shall be constructed through the dam to the satisfaction of DPI Water. The level of the invert of the said pipe shall be fixed at not higher than 0.05 m above the level of the established benchmark or, alternatively the licensee shall provide a 50 mm diameter pipe siphon or other approved device, for passing flows through the storage of the dam.

NS17763

The level of the crest of the bywash of the downstream dam on the unnamed watercourse shall be fixed at not higher than 0.88 m below the level of a bench mark established on the bank of the watercourse near the work and particulars of which are retained in the office of DPI Water.

NS17764

(a) a concrete rock weir shall be constructed on the unnamed watercourse upstream of the dam to the satisfaction of DPI Water. The level of the crest of the said weir shall be fixed at no lower than the level of the established benchmark.

(b) the holder of the license shall install a bypass channel or pipeline with a diameter of not less than 150 mm to the satisfaction of DPI Water in respect of location, type and construction, so as to pass flows from the weir above into the unnamed watercourse downstream from the dam.

(c) the holder of the license shall install through the weir two 150 mm diameter pipes to the satisfaction of DPI Water. One of the said pipes shall discharge into the diversion channel or pipeline and the other shall discharge into the course of the unnamed watercourse upstream of the dam.

Glossary

cease to take - Cease to take conditions means any condition on this approval, or on the access licence under which water is proposed to be taken, that prohibits the taking of water in a particular circumstance.

logbook - A logbook is a document, electronic or hard copy, that records specific required information.

metered water supply work - A metered water supply work is a water supply work fitted with a data logger and a water meter that complies with Australian Standard AS 4747: Meters for non-urban water supply.

water meter - A water meter is a device that measures the volume of water that is extracted over a known period of time. Examples of a water meter may include a mechanical meter, electromagnetic meter, channel meter with mobile phone, or an authorised meter equivalent.

General Notes

All conditions on an approval require compliance. An appeal to the Land and Environment Court against a decision to impose certain conditions on an approval can be made within 28 days after the date the decision is made. Conditions identified with the first letter "D" are those that can be appealed during the appeal period.

The words in this approval have the same meaning as in the *Water Management Act 2000*



Note: The words in this approval have the same meaning as in the WMA

END OF STATEMENT

Nursery Bore Licence

BOX 1W
(A1845103)



NEW SOUTH WALES
CERTIFICATE OF TITLE
WATER MANAGEMENT ACT, 2000



WAL TITLE REFERENCE WAL24157	
EDITION 1	DATE OF ISSUE 1/9/2014
CERTIFICATE AUTHENTICATION CODE 24DC-MV-FR4X	

This certificate is issued under s87B of the Water Management Act, 2000.



WARNING NOTE: INFORMATION ON THIS REGISTER IS NOT GUARANTEED

TENURE TYPE: CONTINUING

HOLDER(S)

LEONARD STANLEY MARTIN

(DW AG357440)

ENCUMBRANCES

1. TERM TRANSFER: NIL

ACCESS LICENCE DETAILS

CATEGORY: AQUIFER

SHARE COMPONENT:

SHARE - 6 UNITS

WATER SOURCE - MAROOTA TERTIARY SANDS GROUNDWATER SOURCE

WATER SHARING PLAN - GREATER METROPOLITAN REGION GROUNDWATER SOURCES

EXTRACTION COMPONENT:

TIMES/RATES/CIRCUMSTANCES - SUBJECT TO THE CONDITIONS OF THE WATER

ACCESS LICENCE

EXTRACTION FROM - AQUIFER

EXTRACTION ZONE - WHOLE WATER SOURCE

NOMINATED WORKS:

WORK APPROVAL NUMBER(S) - 10CA114819

INTERSTATE TAGGING ZONE - NIL

CONDITIONS

LICENCE CONDITIONS FORM A PART OF THIS LICENCE AND AFFECT THE SHARE AND EXTRACTION COMPONENTS. CONDITION STATEMENTS ARE AVAILABLE FROM THE NSW OFFICE OF WATER (NOW).

NOTES

A WATER LICENCE INFORMATION SHEET IS AVAILABLE FROM THE NSW OFFICE OF WATER (NOW) AND SHOULD BE REFERRED TO IN INTERPRETING THIS LICENCE.
NOW WEBSITE WWW.WATER.NSW.GOV.AU, PHONE 1800 353 104, EMAIL INFORMATION@WATER.NSW.GOV.AU
NOW REFERENCE NUMBER: 10AL114818
PREVIOUS WATER ACT LICENCE NUMBER(S): 10PT901431, 10BL157595.

**** END OF CERTIFICATE ****

ANY ATTEMPT TO ALTER THIS CERTIFICATE COULD RESULT IN HEAVY FINES OR IMPRISONMENT (S.141 REAL PROPERTY ACT)

Information about a water licence or approval

Use this tool to search for information about water licences and approvals issued under the Water Act 1912 or Water Management Act 2000.

Select the type of licence or approval and enter the licence or approval number:

- Water access licence (WAL): a WAL number starts with the letters 'WAL' followed by several numbers; a WAL also has a reference number that starts with a two digit number, followed by 'AL' and then several numbers.
- 1912 water licence: a water licence number starts with a two digit number, followed by a two letter code and then several numbers. Note: a PT reference number cannot be entered.
- Approval: an approval number starts with a two digit number, followed by a two letter code (WA, UA, CA or FW) and then several numbers.

Search for information about either a:

- ☐ [Water access licence \(WAL\) issued under the Water Management Act 2000](#)
- ☐ [Approval issued under the Water Management Act 2000](#)

Find out if a Water Act 1912 licence has been converted

☒ [Water licence conversion status](#)

Water Licence Number

10 ▼

BL ▼

157595

Notes:

Water Act 1912 licences and authorities are being converted to water access licences and approvals under the Water Management Act 2000 as water sharing plans commence (see [licence conversion](#)).

If a Water Act 1912 licence has been converted, the search results will display the water access licences and approvals that have been created. Water access licences are registered in the [Water Access Licence Register](#) administered by Land and Property Information. Those water access licences that do not display a WAL number in the search results are still to have their licence details confirmed and completed.

Due to privacy laws very little information on Water Act 1912 licence and authorities can be made freely available. Full information for a particular licence or authority can be obtained if required for conveyancing by applying to the NSW Office of Water. See [legal searches for water related interests](#).

[<< Previous](#) [Search](#)

[Print](#) [Export](#)

Search Results

Access licenses created for '10BL157595'

WAL No.	Water Source				Status
24157	Maroota Tertiary Sands Groundwater Source				Current
Category [Subcategory]	Status	Water Source	Tenure Type	Management Zone	Share Components (units or ML)
Aquifer	Current	Maroota Tertiary Sands Groundwater Source	Continuing		6.00

Extraction Times or Rates

Subject to conditions water may be taken at any time or rate

Nominated Work Approval(s)

10CA114819

- Conditions

Plan Conditions

Water sharing plan Greater Metropolitan Region Groundwater Sources

Take of water

MW0929-00001 From 1 July 2018, if the water supply work nominated on this access licence is located at or less than 40 m from the top of the high bank of a river then:
 A. water must not be taken in this groundwater source when flows are in the Very Low Flow Class for an unregulated river access licence in that river.
 B. This restriction will only apply when the system that confirms when water can be taken is available on DPI Water website.
 C. DPI Water will inform the licence holder in writing of the applicable restrictions and how to access the information on its website when this system becomes operative.

MW0604-00001 Water allocations remaining in the account for this access licence must not be carried over from one water year to the next water year.

MW0605-00001 Water must be taken in compliance with the conditions of the approval for the nominated work on this access licence through which water is to be taken.

MW0603-00001 The total volume of water taken under this access licence in any water year must not exceed a volume equal to:
 A. the sum of water in the account from the available water determination for the current year, plus
 B. the net amount of water assigned to or from the account under a water allocation assignment, plus
 C. any water re-credited by the Minister to the account.

Monitoring and recording

MW2338-00001 The completed logbook must be retained for five (5) years from the last date recorded in the logbook.

MW2336-00001 The purpose or purposes for which water is taken, as well as details of the type of crop, area cropped, and dates of planting and harvesting, must be recorded in the logbook each time water is taken.

- MW0606-00001 The volume of water taken in the water year must be recorded in the logbook at the end of each water year. The maximum volume of water permitted to be taken in that water year must also be recorded in the logbook.
- MW2337-00001 The following information must be recorded in the logbook for each period of time that water is taken:
A. date, volume of water, start and end time when water was taken as well as the pump capacity per unit of time, and
B. the access licence number under which the water is taken, and
C. the approval number under which the water is taken, and
D. the volume of water taken for domestic consumption and/or stock watering.
- MW2339-00001 A logbook must be kept, unless the work is metered and fitted with a data logger. The logbook must be produced for inspection when requested by DPI Water.
- Reporting
- MW0051-00002 Once the licence holder becomes aware of a breach of any condition on this access licence, the licence holder must notify the Minister as soon as practicable. The Minister must be notified by:
A. email: water.enquiries@dpi.nsw.gov.au,
or
B. telephone: 1800 353 104. Any notification by telephone must also be confirmed in writing within seven (7) business days of the telephone call.

Other Conditions

NIL

Approvals created for '10BL157595'

Approval No.	Water Source	Status
10CA114819	Maroota Tertiary Sands Groundwater Source	Current

Kind of Approval	Issue Date	Expiry Date	Approval Number	Status	Water Source
Water Supply Works And Water Use	01-JUL-2011	14-JUN-2025	10CA114819	Current	Maroota Tertiary Sands Groundwater Source

Work Type	Description	No of Works	Location (Lot/ DP)
Extraction Works Gw	Bore	1	Lot 2, DP 228308

Use Purpose(s)	Location(s)
Industrial	Lot 2, DP 228308
Irrigation	Lot 2, DP 228308

Water Access Licences nominating these works

Reference Number	WAL Number
10AL114818	24157

- Conditions

Plan Conditions

Water sharing plan

Greater Metropolitan Region Groundwater Sources

Take of water

MW0655-00001 Any water supply work authorised by this approval must take water in compliance with the conditions of the access licence under which water is being taken.

Water management works

MW0097-00001 If contaminated water is found above the production aquifer during the construction of the water supply work authorised by this approval, the licensed driller must:
A. notify DPI Water in writing within 48 hours of becoming aware of the contaminated water, and
B. adhere to the Minimum Construction Requirements for Water Bores in Australia (2012), as amended or replaced from time to time.

MW0487-00001 The water supply work authorised by this approval must be constructed within three (3) years from the date this approval is granted.

MW0044-00001 When a water supply work authorised by this approval is to be abandoned or replaced, the approval holder must contact DPI Water in writing to verify whether the work must be decommissioned.

The work is to be decommissioned, unless the approval holder receives notice from the Minister not to do so.

When decommissioning the work the approval holder must:

- A. comply with the minimum requirements for decommissioning bores prescribed in the Minimum Construction Requirements for Water Bores in Australia (2012), as amended or replaced from time to time, and
- B. notify DPI Water in writing within sixty (60) days of decommissioning that the work has been decommissioned.

Monitoring and recording

MW0481-00001 A logbook must be kept and maintained at the authorised work site or on the property for each water supply work authorised by this approval, unless the work is metered and fitted with a data logger.

MW0482-00001 Where a water meter is installed on a water supply work authorised by this approval, the meter reading must be recorded in the logbook before taking water. This reading must be recorded every time water is to be taken.

Reporting

MW0051-00001 Once the approval holder becomes aware of a breach of any condition on this approval, the approval holder must notify the Minister as soon as practicable. The Minister must be notified by:
A. email: water.enquiries@dpi.nsw.gov.au,
or
B. telephone: 1800 353 104. Any notification by telephone must also be confirmed in writing within seven (7) business days of the telephone call.

MK0485-00001 Within sixty (60) days of completing construction of the water supply work authorised by this approval, the approval holder must provide a completed Form A for that work to DPI Water.

Other Conditions

Water management works

DK1363-00001	The approval holder must not construct or install works used for the purpose of conveying, distributing or storing water from the works authorised by this approval, that obstruct the reasonable passage of floodwaters flowing in, to, or from a river or lake.
DK1202-00001	The approval holder must allow DPI Water or any person authorised by it, full and free access to the approved works, either during or after construction, for the purpose of carrying out inspection or test of the approved works and its fittings and must carry out any work or alterations deemed necessary by the department for the protection or proper maintenance of the approved works, or the control of the water extracted and for the protection of the quality and the prevention from pollution or contamination of sub-surface water.

Land to which the converted entitlement previously related.

Lot/ DP	Description
Lot 2, DP 228308	Work Location
Lot 2, DP 228308	Land Benefited

Disclaimer: The NSW Office of Water does not warrant the data is current nor does it warrant that the data or the data capturing processes are free from corruption or error.

Privacy: The information provided is limited to meet the requirements of section 57 of the Privacy and Personal Information Act 1998.

Exporting and printing: Search results show a maximum of 50 rows per page. Search results can only be printed page by page.

More information: Should you require further information or technical assistance, please submit your request to water.enquiries@dpi.nsw.gov.au or contact 1800 353 104.

Appendix D Complaints Register

Hodgsons Quarries Complaints Register

Date published:

20/03/2026

Date Received	Site Complaint Regarding	Pollution Complaint Catgeory					
		Air	Water	Noise	Waste	Traffic	Other
Jan-11	Nil received						
Feb-11	Nil received						
Mar-11	Nil received						
Apr-11	Nil received						
May-11	Nil received						
Jun-11	Nil received						
Jul-11	Nil received						
Aug-11	Nil received						
Sep-11	Nil received						
Oct-11	Nil received						
Nov-11	Nil received						
Dec-11	Nil received						
Jan-12	Nil received						
Feb-12	Nil received						
Mar-12	Nil received						
Apr-12	Nil received						
May-12	Nil received						
Jun-12	Nil received						
Jul-12	Nil received						
Aug-12	Nil received						
Sep-12	Nil received						
Oct-12	Nil received						
Nov-12	Nil received						
Dec-12	Nil received						
Jan-13	Nil received						
Feb-13	Nil received						
Mar-13	Nil received						
Apr-13	Nil received						
May-13	Nil received						
Jun-13	Nil received						
Jul-13	Nil received						
Aug-13	Nil received						
Sep-13	Nil received						
Oct-13	Nil received						
Nov-13	Nil received						
Dec-13	Nil received						
Jan-14	Nil received						
Feb-14	Nil received						
Mar-14	Nil received						
Apr-14	Nil received						
May-14	Nil received						
Jun-14	Nil received						
Jul-14	Nil received						
Aug-14	Nil received						
Sep-14	Nil received						
Oct-14	Nil received						
Nov-14	Nil received						
Dec-14	Nil received						
Jan-15	Nil received						
Feb-15	Nil received						
Mar-15	Nil received						
Apr-15	Nil received						
May-15	Nil received						
Jun-15	Nil received						
Jul-15	Nil received						

Hodgsons Quarries Complaints Register

Date published:

20/03/2026

Date Received	Site Complaint Regarding	Pollution Complaint Catgeory					
		Air	Water	Noise	Waste	Traffic	Other
Aug-15	Nil received						
Sep-15	Nil received						
Oct-15	Nil received						
Nov-15	Nil received						
Dec-15	Nil received						
Jan-16	Nil received						
Feb-16	Nil received						
Mar-16	Nil received						
Apr-16	Nil received						
May-16	Nil received						
Jun-16	Nil received						
Jul-16	Nil received						
Aug-16	Nil received						
Sep-16	Nil received						
Oct-16	Nil received						
Nov-16	Nil received						
Dec-16	Nil received						
Jan-17	Nil received						
Feb-17	Nil received						
Mar-17	Nil received						
Apr-17	Nil received						
May-17	Nil received						
Jun-17	Nil received						
Jul-17	Nil received						
Aug-17	Nil received						
Sep-17	Nil received						
Oct-17	Nil received						
Nov-17	Nil received						
Dec-17	Nil received						
Jan-18	Nil received						
Feb-18	Nil received						
Mar-18	Nil received						
Apr-18	Nil received						
May-18	Nil received						
Jun-18	Nil received						
Jul-18	Nil received						
Aug-18	Nil received						
Sep-18	Nil received						
Oct-18	Nil received						
Nov-18	Nil received						
Dec-18	Nil received						
Jan-19	Nil received						
Feb-19	Nil received						
Mar-19	Nil received						
Apr-19	Nil received						
May-19	Nil received						
Jun-19	Nil received						
Jul-19	Nil received						
Aug-19	Nil received						
Sep-19	Nil received						
Oct-19	Nil received						
Nov-19	Nil received						
Dec-19	Nil received						
Jan-20	Nil received						
Feb-20	Nil received						

Hodgsons Quarries Complaints Register

Date published:

23/03/2026

Date Received	Site Complaint Regarding	Pollution Complaint Catgeory					
		Air	Water	Noise	Waste	Traffic	Other
Mar-20	Nil received						
Apr-20	Nil received						
May-20	Nil received						
Jun-20	Nil received						
Jul-20	Nil received						
Aug-20	Nil received						
Sep-20	Nil received						
Oct-20	Nil received						
Nov-20	Nil received						
Dec-20	Nil received						
Jan-21	Nil received						
Feb-21	Nil received						
Mar-21	Nil received						
Apr-21	Nil received						
May-21	Nil received						
Jun-21	Nil received						
Jul-21	Nil received						
Aug-21	Nil received						
Sep-21	Nil received						
Oct-21	Nil received						
Nov-21	Nil received						
Dec-21	Nil received						
Jan-22	Nil received						
Feb-22	Nil received						
Mar-22	Nil received						
Apr-22	Nil received						
May-22	Nil received						
Jun-22	Nil received						
Jul-22	Nil received						
Aug-22	Nil received						
Sep-22	Nil received						
Oct-22	Nil received						
Nov-22	Nil received						
Dec-22	Nil received						
Jan-23	Nil received						
Feb-23	Nil received						
Mar-23	Nil received						
Apr-23	Nil received						
May-23	Nil received						
Jun-23	Nil received						
Jul-23	Nil received						
Aug-23	Nil received						
Sep-23	Nil received						
Oct-23	Nil received						
Nov-23	Nil received						
Dec-23	Nil received						
Jan-24	Nil received						
Feb-24	Nil received						
Mar-24	Nil received						
Apr-24	Nil received						
May-24	Nil received						
Jun-24	Nil received						
Jul-24	Nil received						
Aug-24	Nil received						
Sep-24	Nil received						

Hodgsons Quarries Complaints Register

Date published:

23/03/2026

Date Received	Site Complaint Regarding	Pollution Complaint Catgeory					
		Air	Water	Noise	Waste	Traffic	Other
Oct-24	Nil received						
Nov-24	Nil received						
Dec-24	Nil received						
Jan-25	Nil received						
Feb-25	Nil received						
Mar-25	Nil received						
Apr-25	Nil received						
May-25	Nil received						
Jun-25	Nil received						
Jul-25	Nil received						
Aug-25	Nil received						
Sep-25	Nil received						
Oct-25	Nil received						
Nov-25	Nil received						
Dec-25	Nil received						
Jan-26	Nil received						
Feb-26	Nil received						

Appendix E

Environmental Monitoring Summaries

Report Period

12/01/2026

2/02/2026

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

Report Period



2/02/2026

2/03/2026

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

Site Monitoring Locations



Groundwater Levels

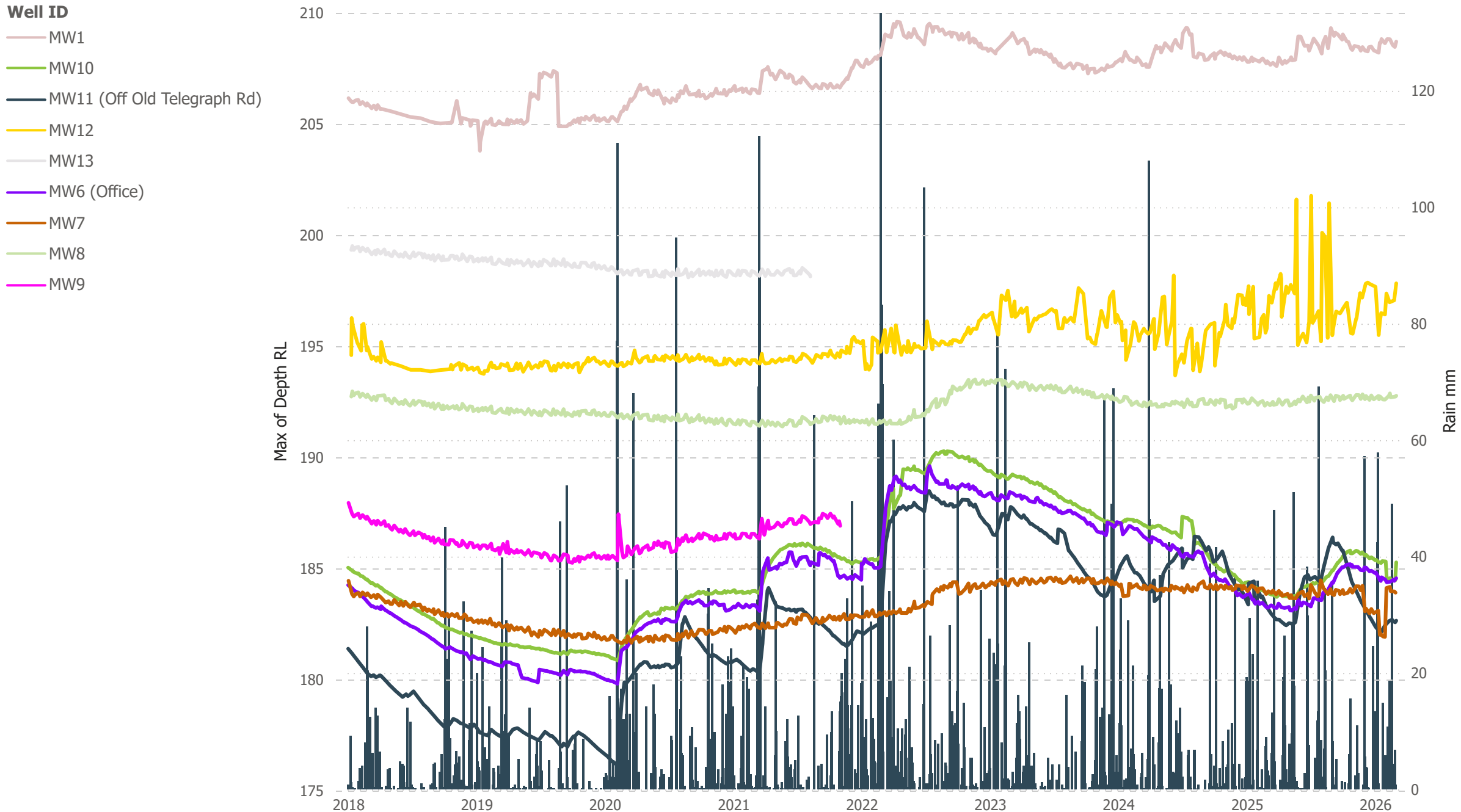
Groundwater levels are currently monitored in nine boreholes located on the site. Groundwater levels are manually measured for depth each month using a groundwater dipper. Data is downloaded from groundwater loggers where present. MW1 logger was installed prior to 2015; the remaining loggers were installed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

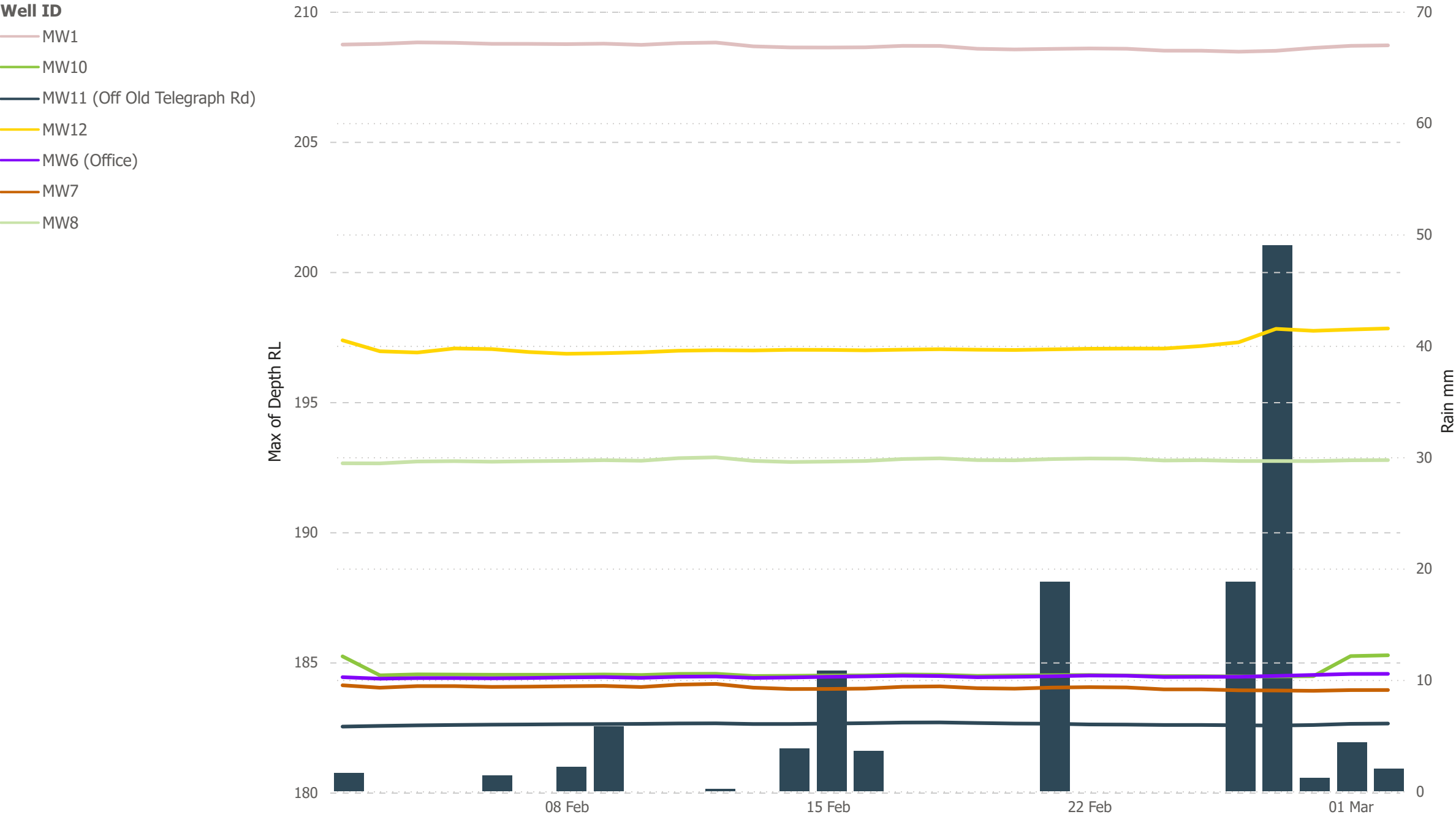
MW1 and MW12 were taken away for repairs during April 2018 and returned in October 2018, hence the gap in reporting on the following graphs.

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

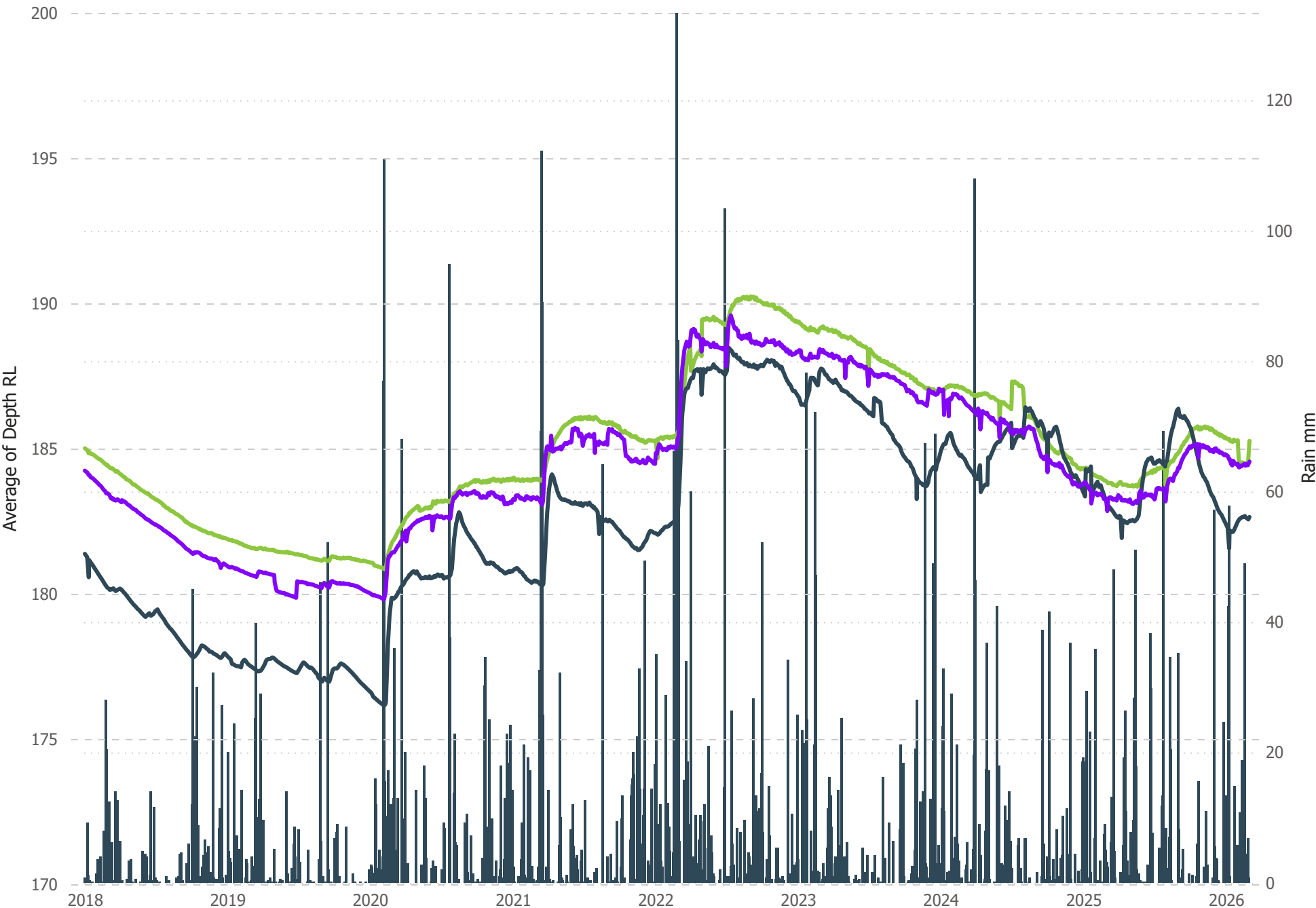


Graph 2: All Groundwater Depths with Rainfall this period

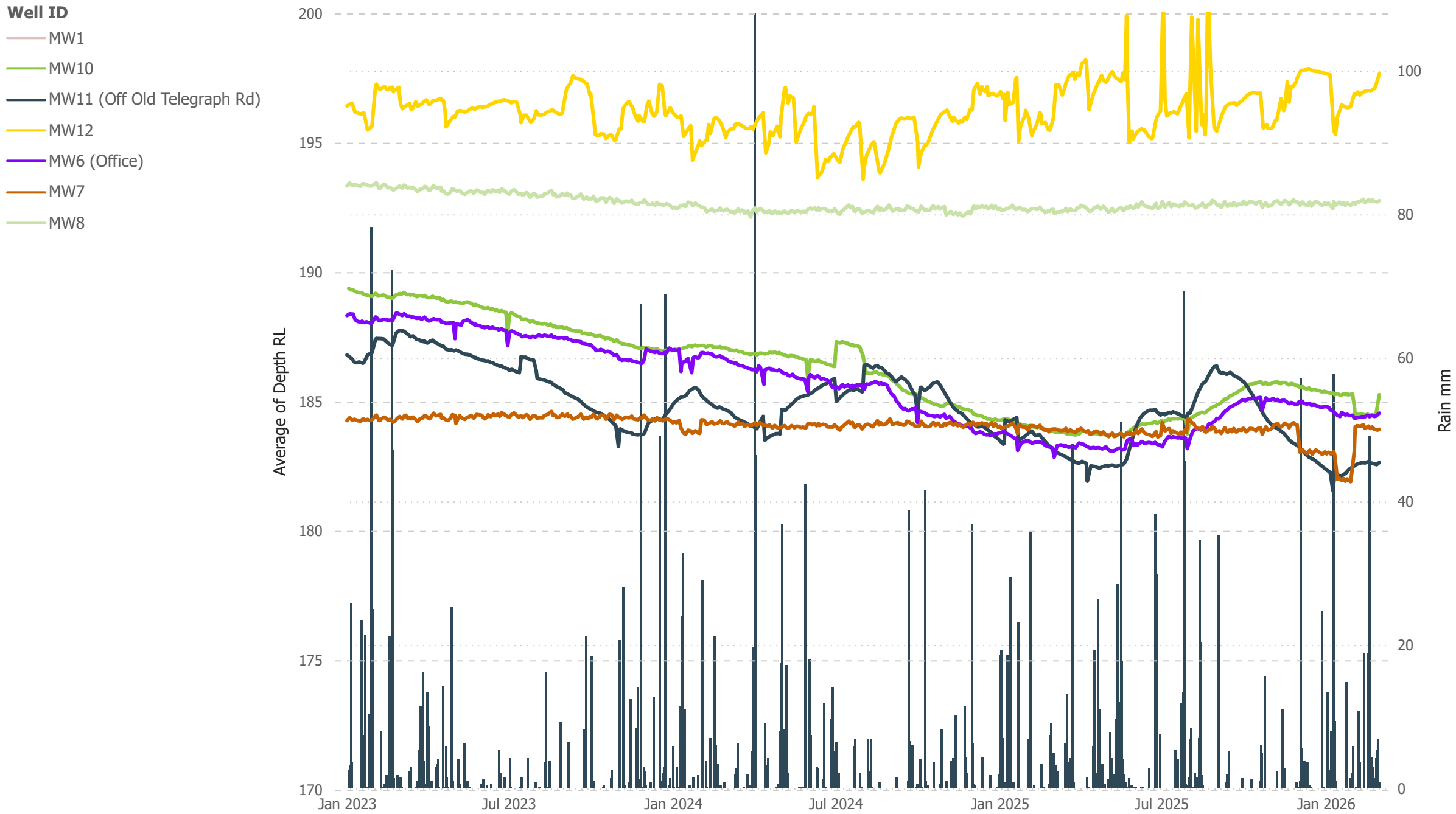


Graph 3: All Groundwater Depths with Rainfall in Maroota Sand

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



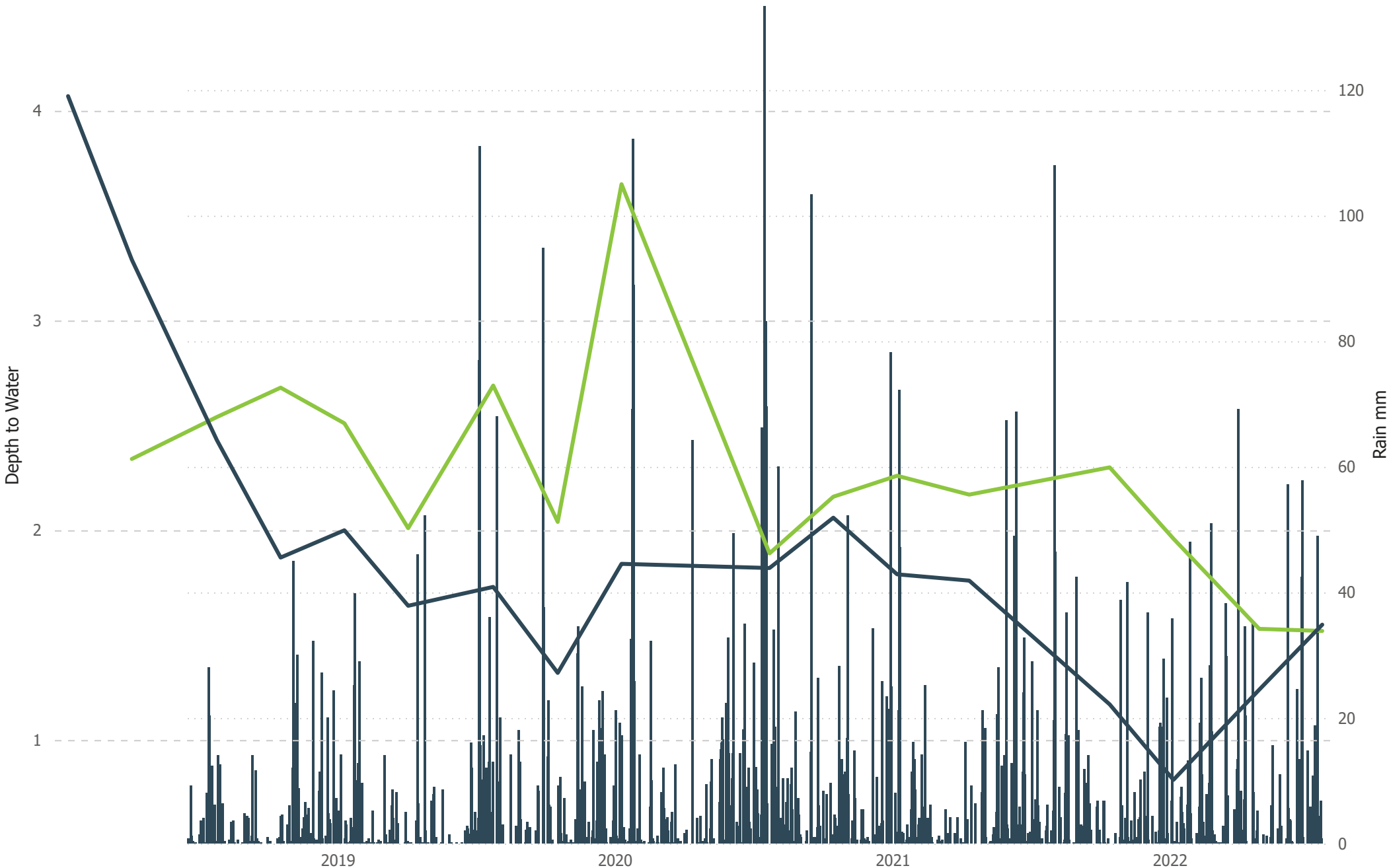
Graph 4: All Groundwater Depths with Rainfall in Hawkesbury Sandstone



Graph 5: Surface Water Depths with Rainfall

Sample

- Dam 1 - Process
- Dam 2 - Tailings



Weather Station Monitoring

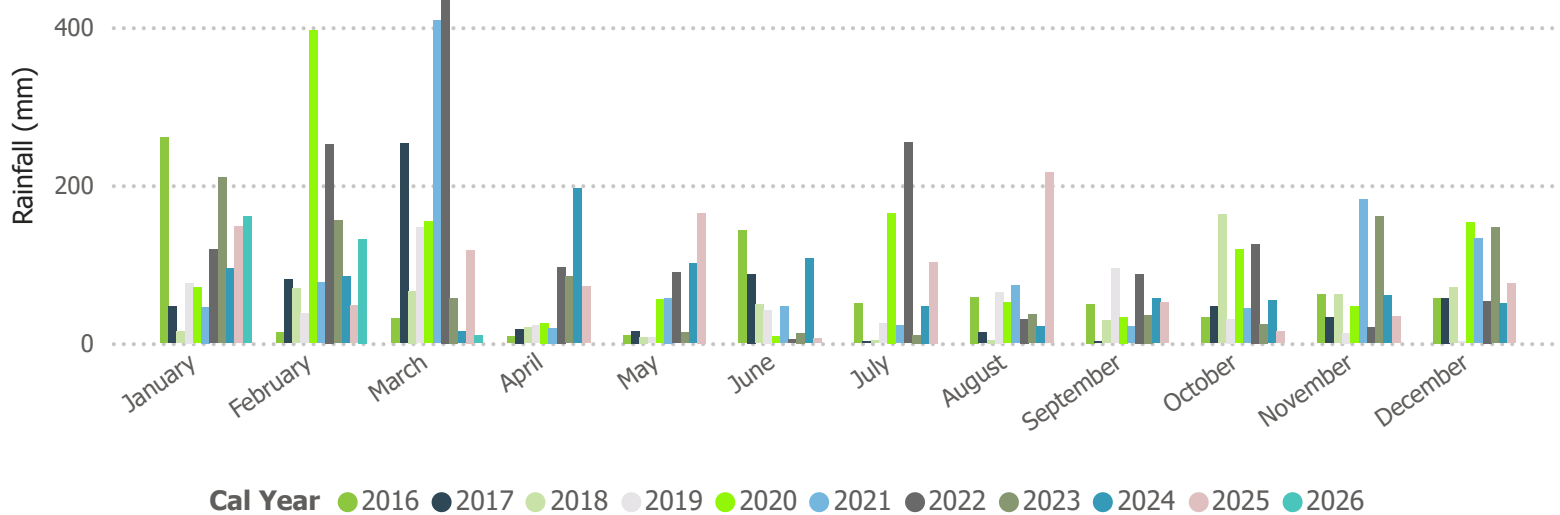
Due to gauge malfunctions, rainfall was not recorded in 2020 until a new weather station was installed onsite 29th May 2020. Where available, daily rainfall received in the interim was been sourced from the Bureau of Meteorology. Temperature monitoring during that period also shows gaps in the data.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

Weather Trends

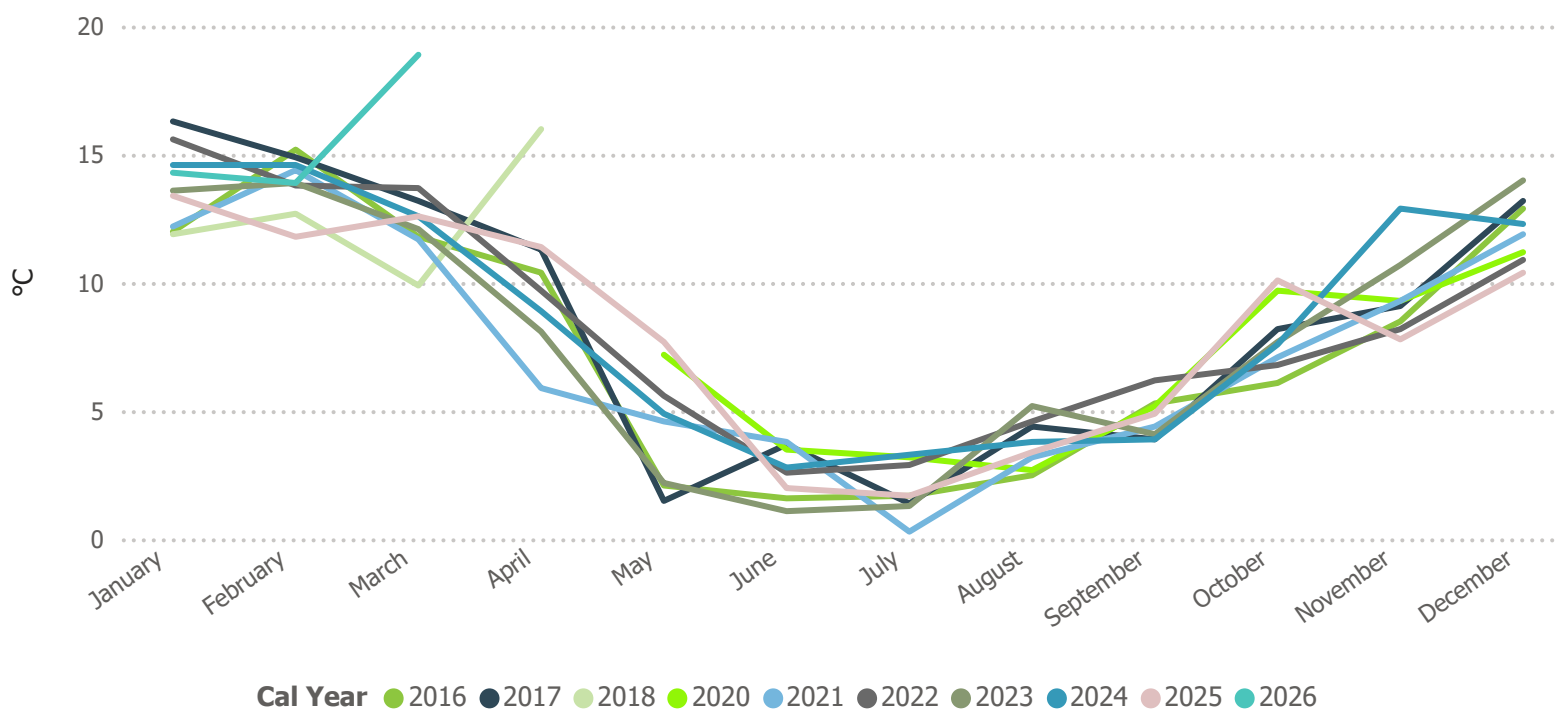
1/01/2016

3/03/2026

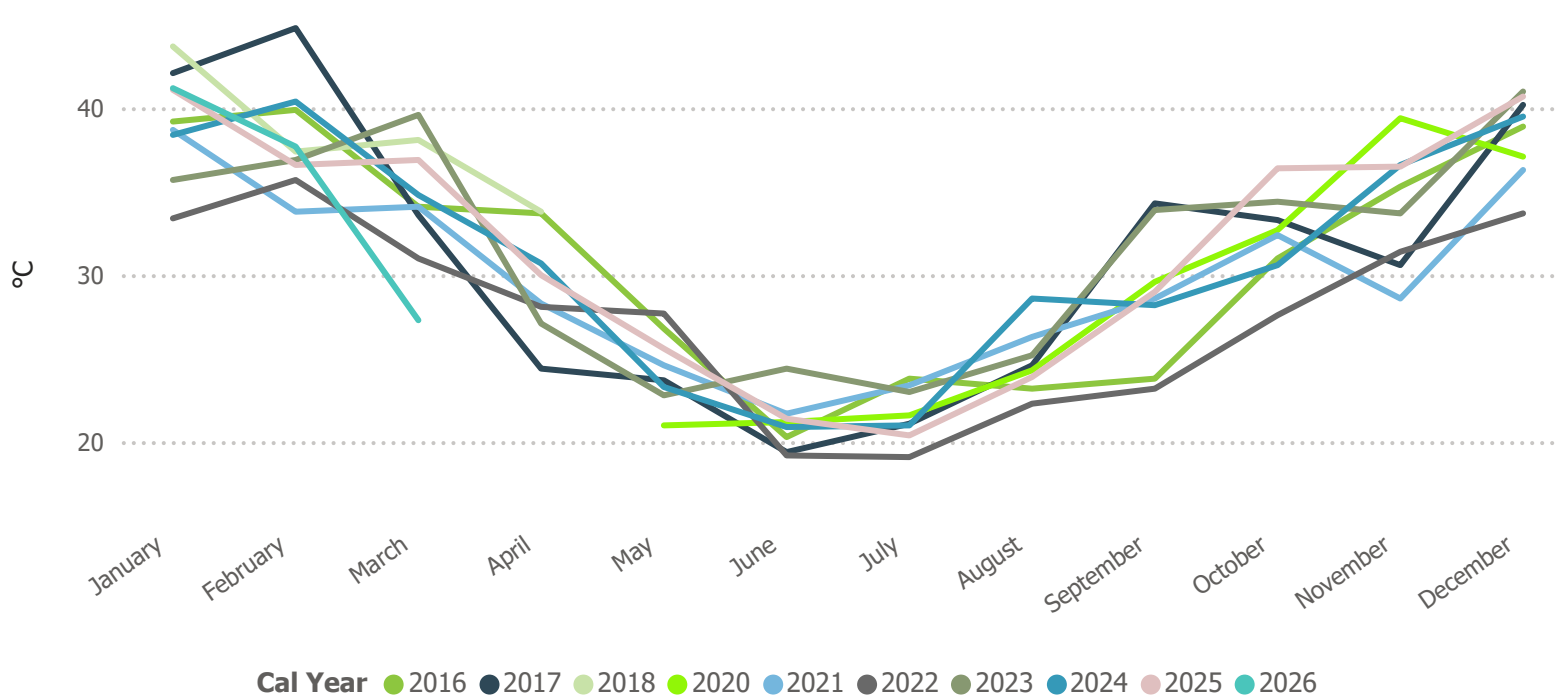
Precipitation



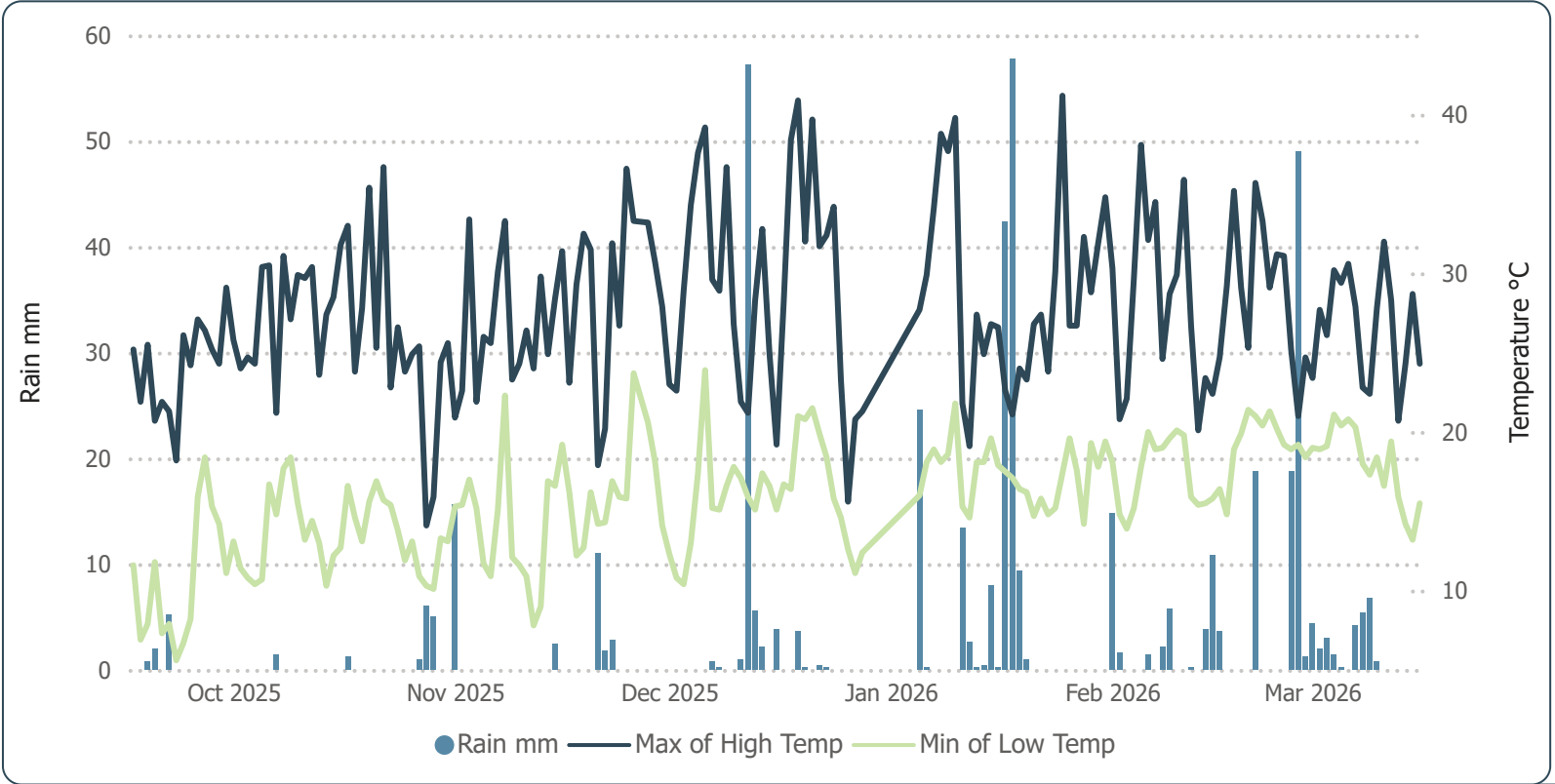
Minimum Temperature



Maximum Temperature



Weather Detail for last 6 months



Precipitation mm

Cal Year	January	February	March	September	October	November	December	Total
2025				8.0	14.6	33.6	75.2	131.4
2026	160.2	132.0	28.2					320.4

Minimum Temperature °C

Cal Year	January	February	March	September	October	November	December	Total
2025				5.6	10.1	7.8	10.4	5.6
2026	14.3	13.9	13.3					13.3

Average Temperature °C

Cal Year	January	February	March	September	October	November	December	Total
2025				17.1	19.5	20.3	21.9	20.0
2026	22.3	22.3	21.4					22.1

Maximum Temperature °C

Cal Year	January	February	March	September	October	November	December	Total
2025				29.0	36.4	36.5	40.7	40.7
2026	41.2	37.7	31.8					41.2

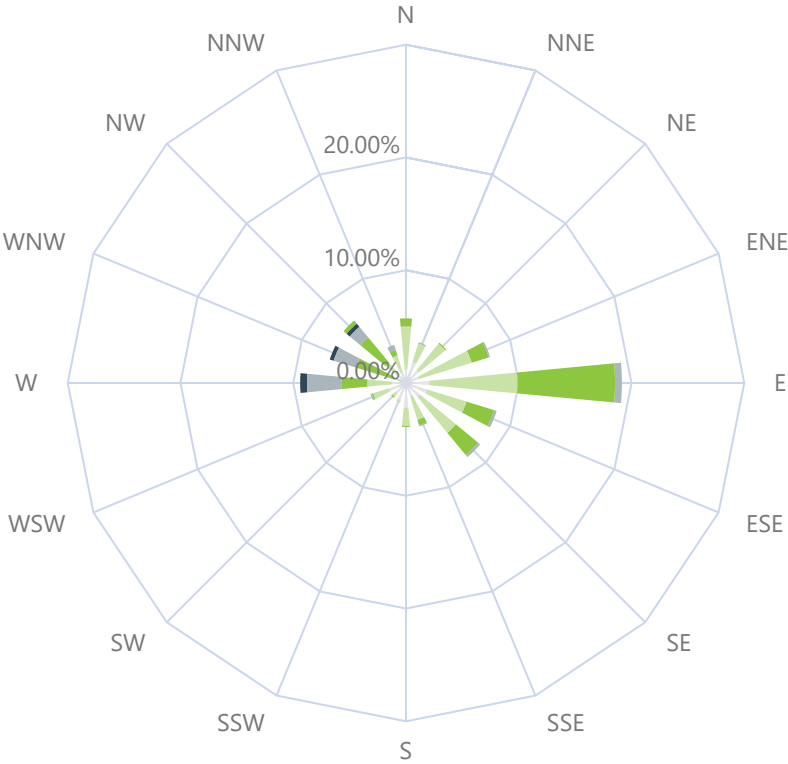
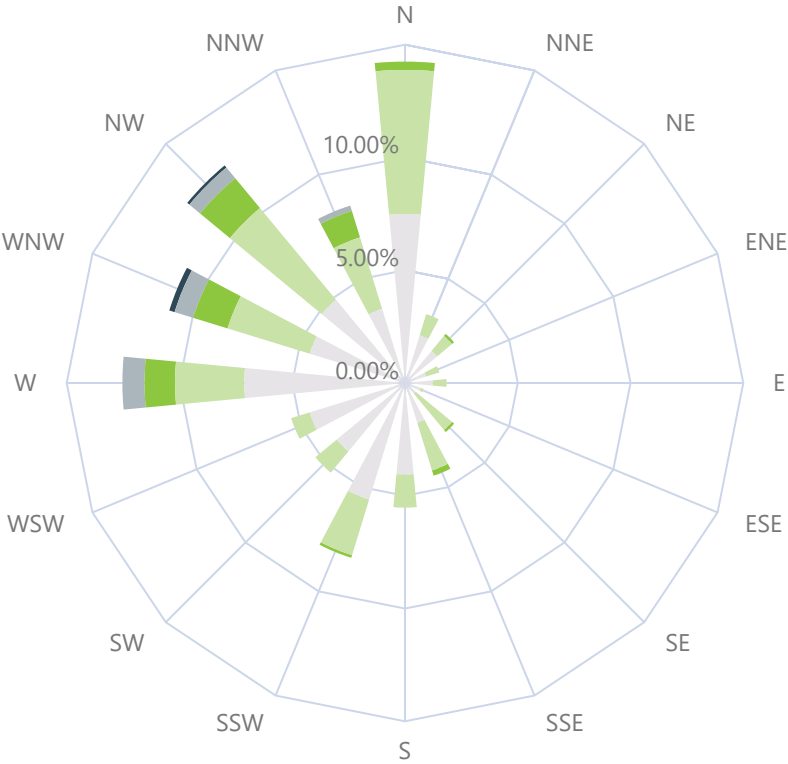
Wind Rose for Last 12 Months

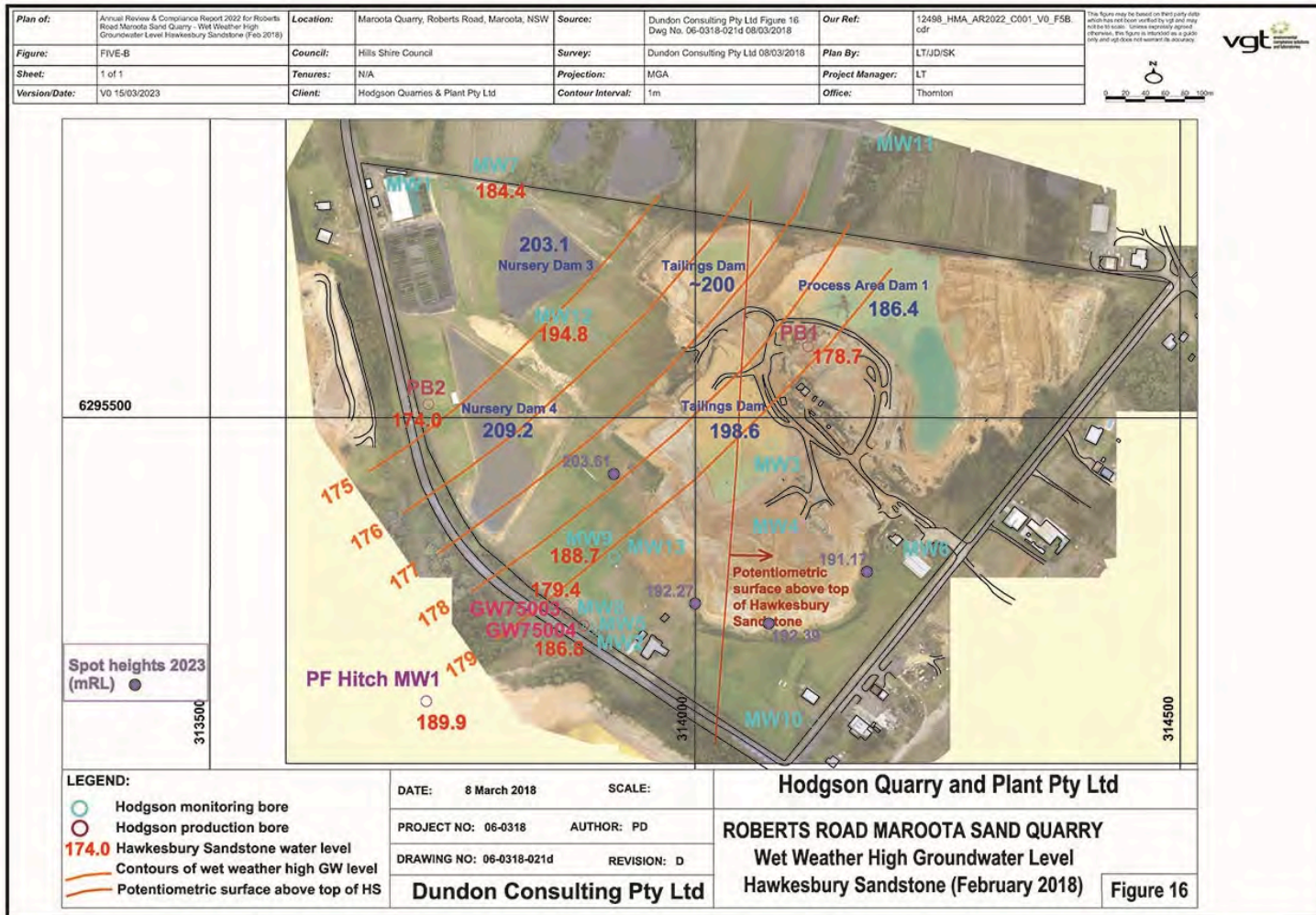
9 am

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

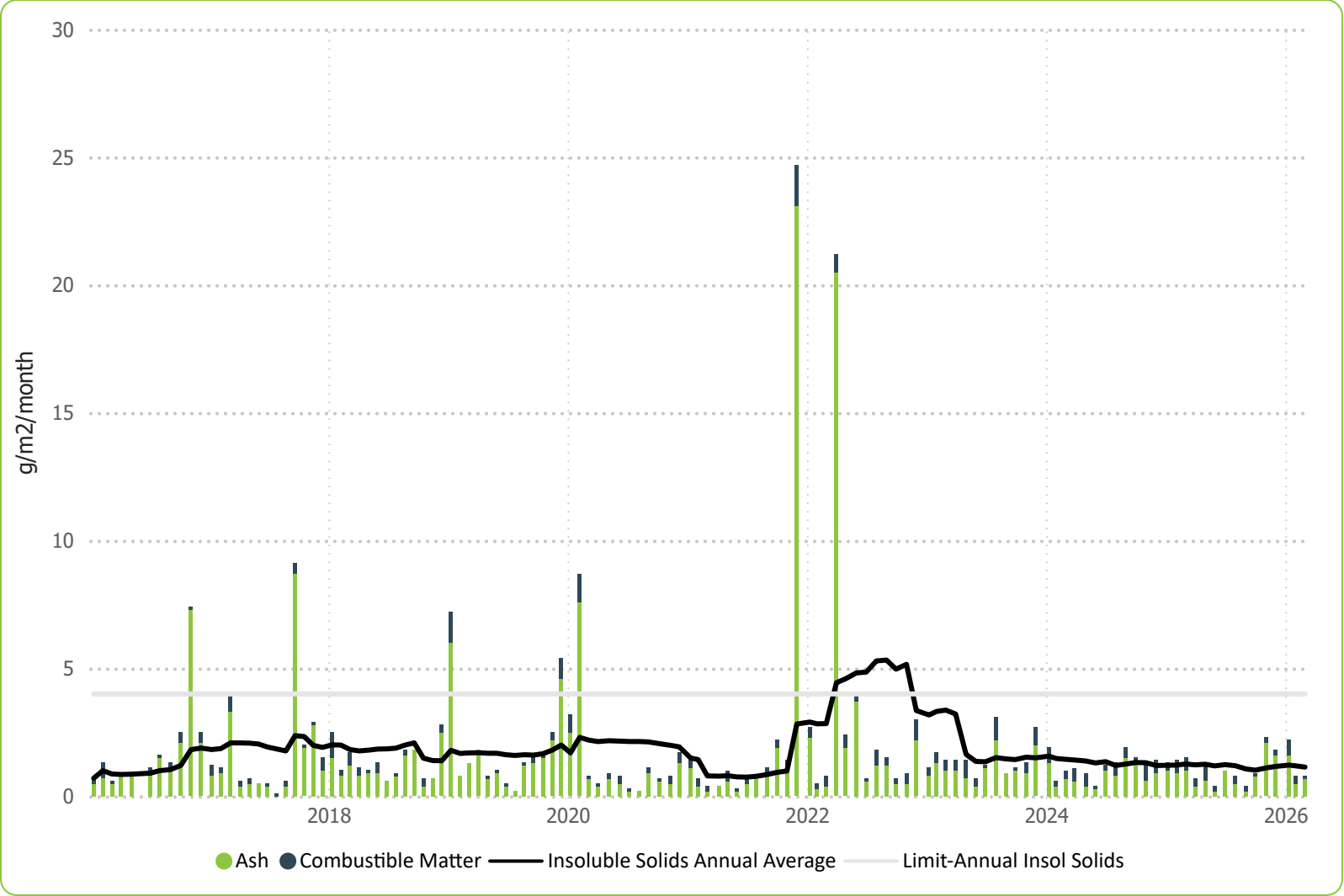




Depositional Dust and Particulate Matter Monitoring

Depositional Dusts last 12 months

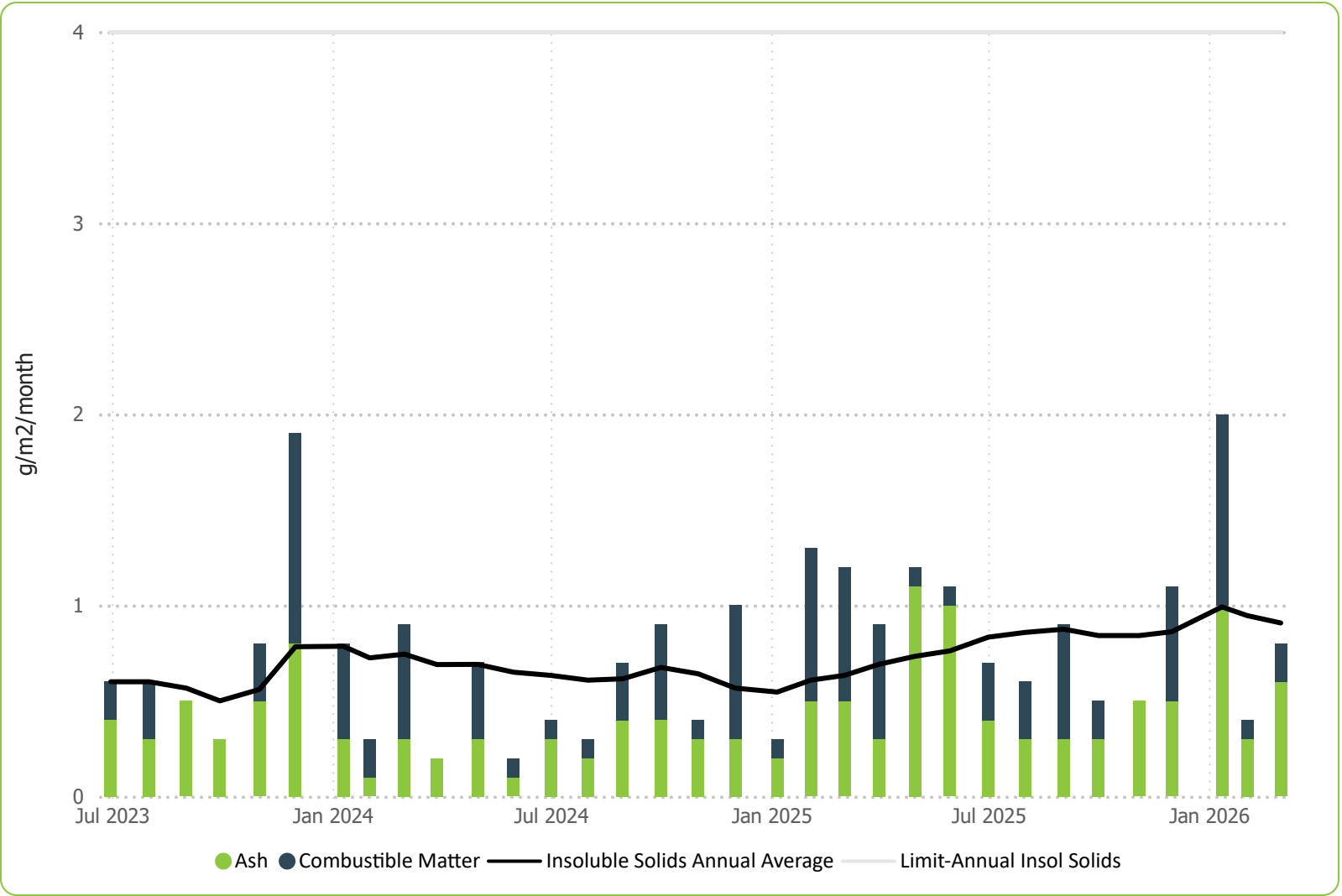
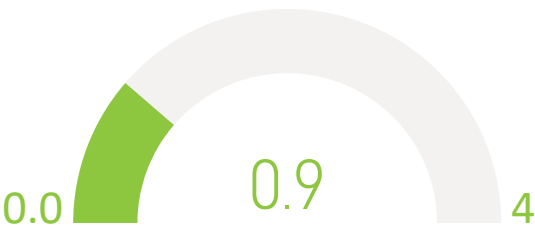
Insoluble Solids
Annual Average
g/m2/month



Date On	Comments	Date Sampled	Days On	Insoluble Solids	Ash	Combustible Matter	Calculated Rain
3/03/25		1/4/25	29	0.7	0.4	0.3	115
1/04/25		1/5/25	30	1.2	0.6	0.6	80
1/05/25		30/5/25	28	0.4	0.2	0.2	115
30/05/25		1/7/25	32	1.0	1.0	0.0	22
1/07/25		1/8/25	31	0.8	0.5	0.3	100
1/08/25		2/9/25	32	0.4	0.2	0.2	115
2/09/25		1/10/25	29	0.9	0.8	0.1	49
1/10/25		4/11/25	28	2.3	2.1	0.2	30
4/11/25		1/12/25	27	1.8	1.6	0.2	23
1/12/25		12/1/26	28	2.2	1.6	0.6	115
12/01/26		2/2/26	28	0.8	0.5	0.3	115
2/02/26		2/3/26	28	0.8	0.7	0.1	30

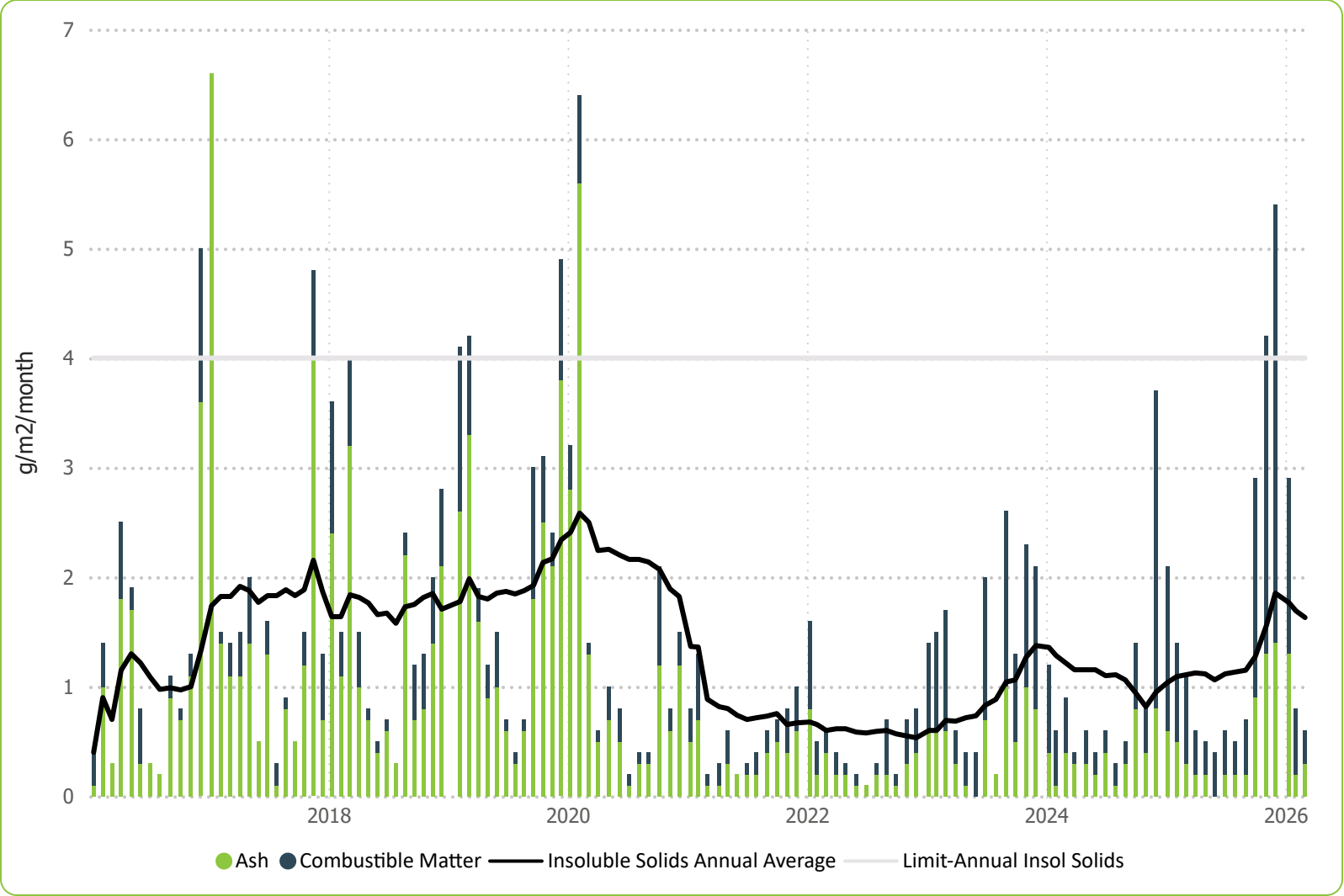
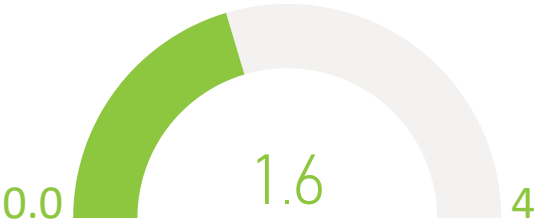


Insoluble Solids
Annual Average
g/m2/month



Date On	Comments	Date Sampled	Days On	Insoluble Solids	Ash	Combustible Matter	Calculated Rain
3/02/25		3/3/25	28	1.2	0.5	0.7	40
3/03/25		1/4/25	29	0.9	0.3	0.6	107
1/04/25		1/5/25	30	1.2	1.1	0.1	78
1/05/25		30/5/25	28	1.1	1.0	0.1	115
30/05/25		1/7/25	32	0.7	0.4	0.3	14
1/07/25		1/8/25	31	0.6	0.3	0.3	86
1/08/25		2/9/25	32	0.9	0.3	0.6	114
2/09/25		1/10/25	29	0.5	0.3	0.2	42
1/10/25		4/11/25	28	0.4	0.5	0.0	26
4/11/25		1/12/25	27	1.1	0.5	0.6	11
1/12/25		12/1/26	28	2.0	1.0	1.0	115
12/01/26		2/2/26	28	0.4	0.3	0.1	114
2/02/26		2/3/26	28	0.8	0.6	0.2	114

Insoluble Solids
Annual Average
g/m2/month



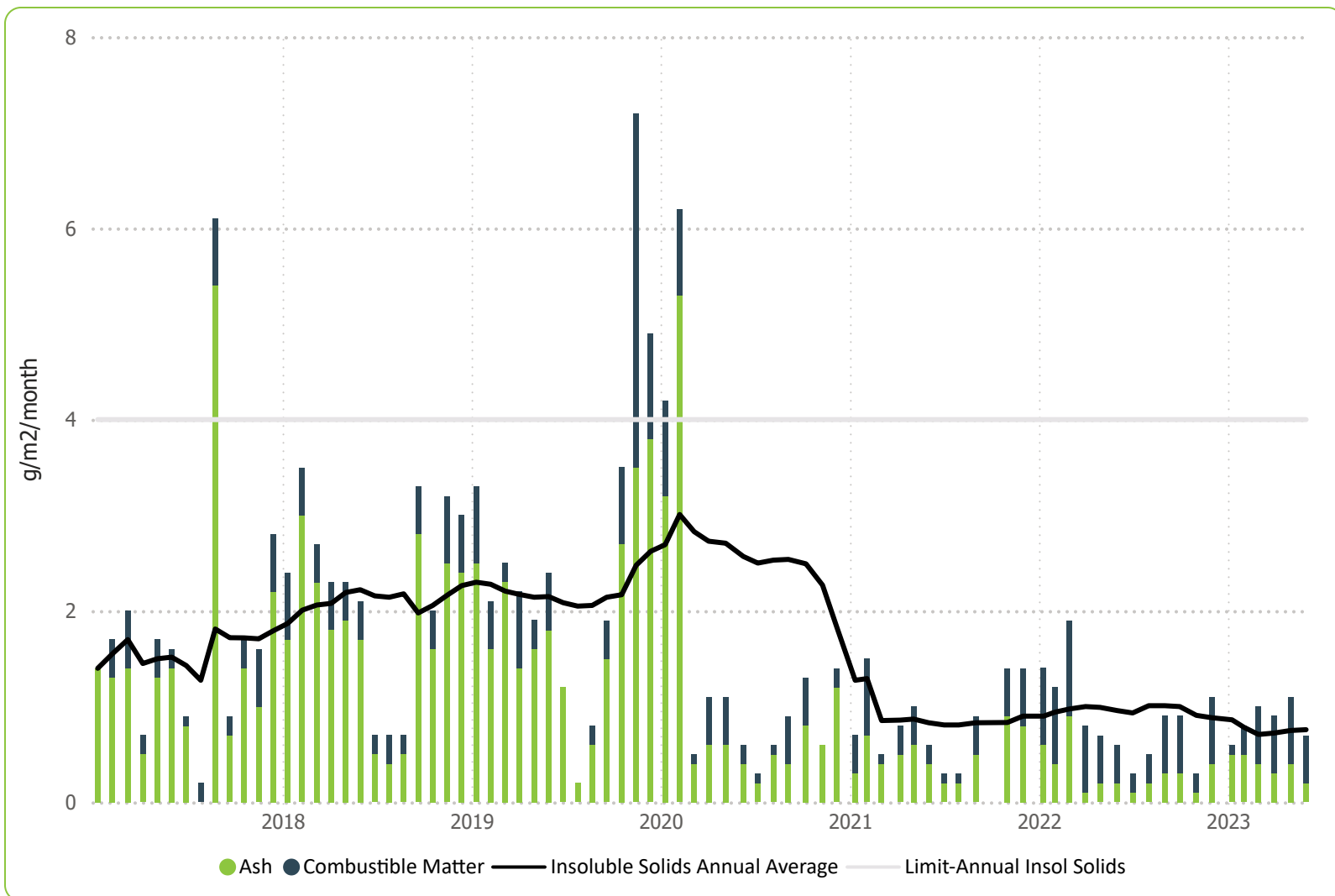
Date On	Comments	Date Sampled	Days On	Insoluble Solids	Ash	Combustible Matter	Calculated Rain
3/03/25		1/4/25	29	0.6	0.2	0.4	115
1/04/25		1/5/25	30	0.5	0.2	0.3	80
1/05/25		30/5/25	28	0.4	0.0	0.4	115
30/05/25		1/7/25	32	0.6	0.2	0.4	21
1/07/25		1/8/25	31	0.5	0.2	0.3	96
1/08/25		2/9/25	32	0.7	0.2	0.5	114
2/09/25		1/10/25	29	2.9	0.9	2.0	51
1/10/25		4/11/25	28	4.2	1.3	2.9	32
4/11/25		1/12/25	27	5.4	1.4	4.0	22
1/12/25		12/1/26	28	2.9	1.3	1.6	110
12/01/26		2/2/26	28	0.8	0.2	0.6	115
2/02/26		2/3/26	28	0.6	0.3	0.3	115

Depositional Dusts last 12 months

D2 North East Corner

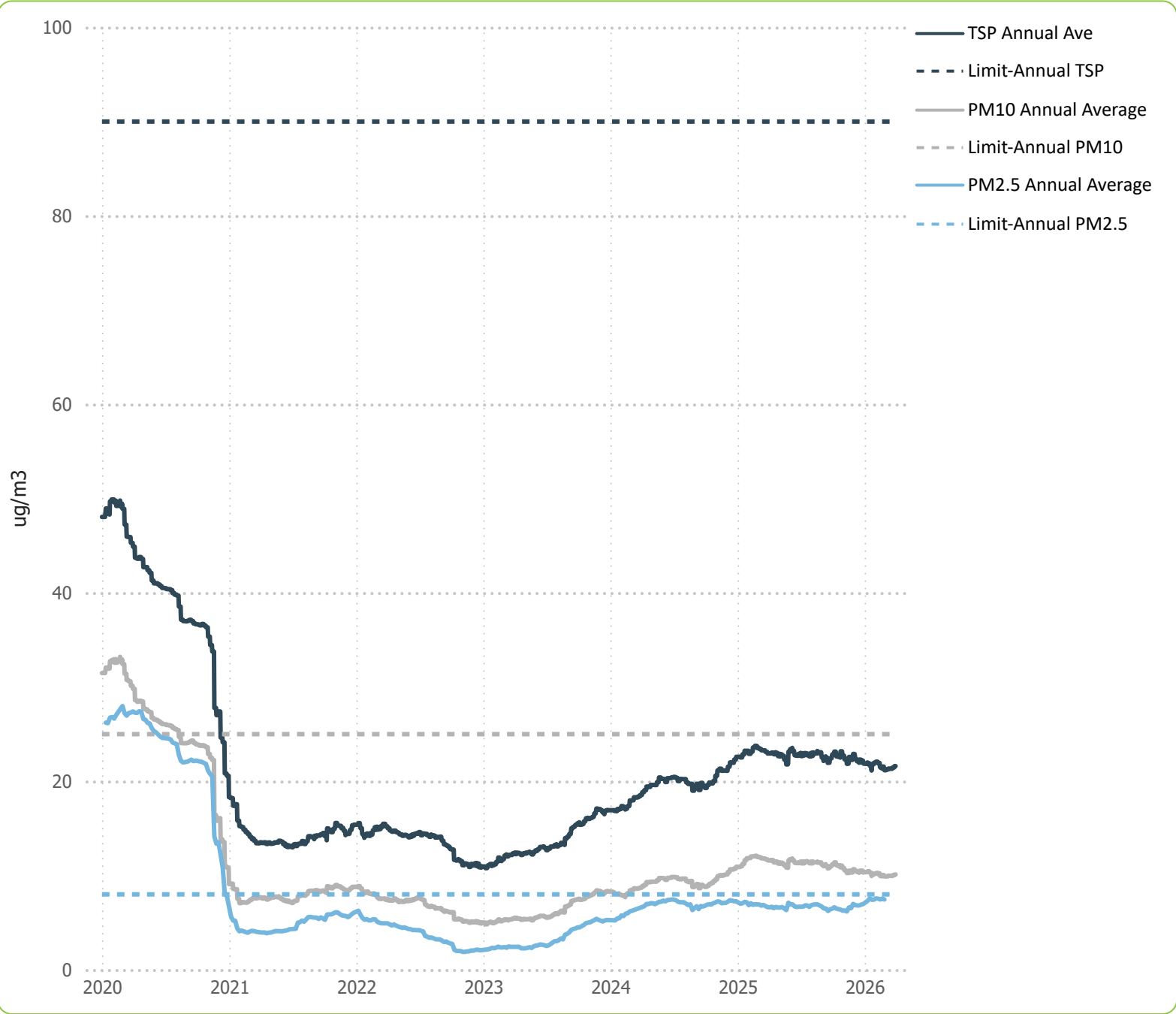
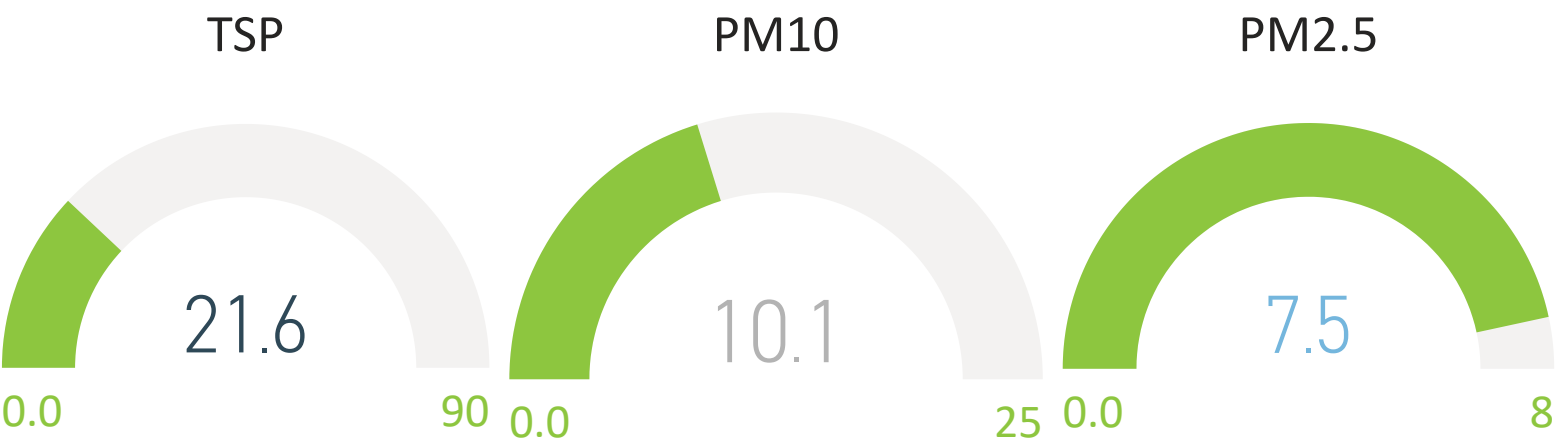


**Insoluble Solids
Annual Average
g/m2/month**

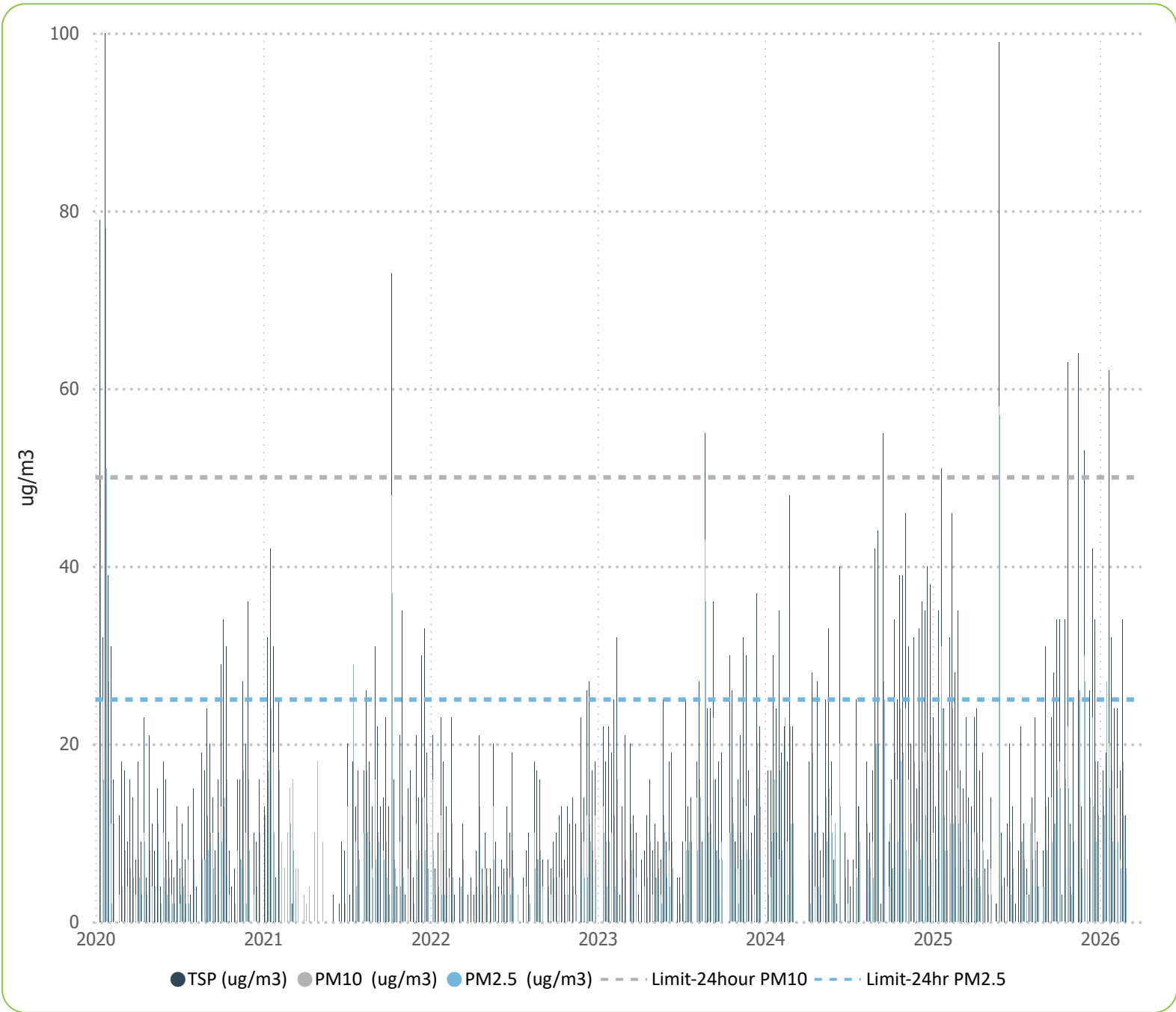


Date On	Comments	Date Sampled	Days On	Insoluble Solids	Ash	Combustible Matter	Calculated Rain
1/06/22	Sampled by Melissa Mass	1/7/22	30	0.3	0.1	0.2	4
1/07/22	Sampled by Melissa Mass. Flooding rainfall event during July.	1/8/22	31	0.5	0.2	0.3	115
1/08/22	Sampled by Melissa Mass.	1/9/22	31	0.9	0.3	0.6	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

Particulate Matter Annual Averages (µg/m3)



Particulate Matter 24 Hour Averages (µg/m3)



PM10 24 hour exceedances (>50 µg/m3)

Date	PM10 (ug/m3)	Sampling Comments
------	--------------	-------------------

PM2.5 24 hour exceedances (>25 µg/m3)

Date	PM2.5 (ug/m3)	Sampling Comments
17/11/25	26.00	
29/11/25	27.00	
16/1/26	27.00	Paper got wet and dirt spilt on it.

Sample

Dam 1 - Process

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
Dam 1 - Process	9/4/25	6.6	219	140	53	11	5.0	4.0	20	2.0
Dam 1 - Process	30/7/25	6.8	184	110	36	14	5.4	3.0	20	2.0
Dam 1 - Process	22/10/25	5.7	181	110	36	16	4.0	3.0	17	2.0
Dam 1 - Process	9/1/26	6.9	193	120	40	14	6.2	3.0	20	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
Dam 1 - Process	9/4/25	6.6	219	140	53	11	5.0	4.0	20	2.0
Dam 1 - Process	30/7/25	6.8	184	110	36	14	5.4	3.0	20	2.0
Dam 1 - Process	22/10/25	5.7	181	110	36	16	4.0	3.0	17	2.0
Dam 1 - Process	9/1/26	6.9	193	120	40	14	6.2	3.0	20	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
Dam 1 - Process	9/4/25	6.6	219	140	53	11	5.0	4.0	20	2.0
Dam 1 - Process	30/7/25	6.8	184	110	36	14	5.4	3.0	20	2.0
Dam 1 - Process	22/10/25	5.7	181	110	36	16	4.0	3.0	17	2.0
Dam 1 - Process	9/1/26	6.9	193	120	40	14	6.2	3.0	20	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
Dam 1 - Process	9/4/25	6.6	219	140	53	11	5.0	4.0	20	2.0
Dam 1 - Process	30/7/25	6.8	184	110	36	14	5.4	3.0	20	2.0
Dam 1 - Process	22/10/25	5.7	181	110	36	16	4.0	3.0	17	2.0
Dam 1 - Process	9/1/26	6.9	193	120	40	14	6.2	3.0	20	2.0

Sample

Dam 2 - Tailings

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
Dam 2 - Tailings	9/4/25	4.3	209	130	51	7	4.0	4.0	18	2.0
Dam 2 - Tailings	30/7/25	4.0	264	160	66	3	1.0	5.7	31	1.0
Dam 2 - Tailings	22/10/25	4.6	205	130	44	7	3.0	4.0	18	2.0
Dam 2 - Tailings	9/1/26	5.8	207	130	46	11	5.6	4.0	24	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
Dam 2 - Tailings	9/4/25	4.3	209	130	51	7	4.0	4.0	18	2.0
Dam 2 - Tailings	30/7/25	4.0	264	160	66	3	1.0	5.7	31	1.0
Dam 2 - Tailings	22/10/25	4.6	205	130	44	7	3.0	4.0	18	2.0
Dam 2 - Tailings	9/1/26	5.8	207	130	46	11	5.6	4.0	24	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
Dam 2 - Tailings	9/4/25	4.3	209	130	51	7	4.0	4.0	18	2.0
Dam 2 - Tailings	30/7/25	4.0	264	160	66	3	1.0	5.7	31	1.0
Dam 2 - Tailings	22/10/25	4.6	205	130	44	7	3.0	4.0	18	2.0
Dam 2 - Tailings	9/1/26	5.8	207	130	46	11	5.6	4.0	24	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
Dam 2 - Tailings	9/4/25	4.3	209	130	51	7	4.0	4.0	18	2.0
Dam 2 - Tailings	30/7/25	4.0	264	160	66	3	1.0	5.7	31	1.0
Dam 2 - Tailings	22/10/25	4.6	205	130	44	7	3.0	4.0	18	2.0
Dam 2 - Tailings	9/1/26	5.8	207	130	46	11	5.6	4.0	24	2.0

Sample

Dam 3 - Nursery

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
Dam 3 - Nursery	9/4/25	6.2	216	130	50	6	5.8	5.3	19	5.0
Dam 3 - Nursery	30/7/25	5.8	173	110	37	6	3.0	4.0	18	3.0
Dam 3 - Nursery	22/10/25	6.4	167	100	36	7	4.0	4.0	15	3.0
Dam 3 - Nursery	9/1/26	6.2	184	110	39	8	5.3	4.0	19	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 3 - Nursery	9/4/25	6.2	216	130	50	6	5.8	5.3	19	5.0
Dam 3 - Nursery	30/7/25	5.8	173	110	37	6	3.0	4.0	18	3.0
Dam 3 - Nursery	22/10/25	6.4	167	100	36	7	4.0	4.0	15	3.0
Dam 3 - Nursery	9/1/26	6.2	184	110	39	8	5.3	4.0	19	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 3 - Nursery	9/4/25	6.2	216	130	50	6	5.8	5.3	19	5.0
Dam 3 - Nursery	30/7/25	5.8	173	110	37	6	3.0	4.0	18	3.0
Dam 3 - Nursery	22/10/25	6.4	167	100	36	7	4.0	4.0	15	3.0
Dam 3 - Nursery	9/1/26	6.2	184	110	39	8	5.3	4.0	19	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 3 - Nursery	9/4/25	6.2	216	130	50	6	5.8	5.3	19	5.0
Dam 3 - Nursery	30/7/25	5.8	173	110	37	6	3.0	4.0	18	3.0
Dam 3 - Nursery	22/10/25	6.4	167	100	36	7	4.0	4.0	15	3.0
Dam 3 - Nursery	9/1/26	6.2	184	110	39	8	5.3	4.0	19	3.0

Sample

Dam 4 - Farm

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
Dam 4 - Farm	9/4/25	8.8	212	130	31	2	6.6	5.7	15	13.0
Dam 4 - Farm	30/7/25	6.1	123	77	24	3	3.0	3.0	13	4.0
Dam 4 - Farm	22/10/25	6.4	138	86	27	4	3.0	3.0	13	4.0
Dam 4 - Farm	9/1/26	6.3	176	110	32	4	4.0	4.0	16	5.1

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	9/4/25	8.8	212	130	31	2	6.6	5.7	15	13.0
Dam 4 - Farm	30/7/25	6.1	123	77	24	3	3.0	3.0	13	4.0
Dam 4 - Farm	22/10/25	6.4	138	86	27	4	3.0	3.0	13	4.0
Dam 4 - Farm	9/1/26	6.3	176	110	32	4	4.0	4.0	16	5.1

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	9/4/25	8.8	212	130	31	2	6.6	5.7	15	13.0
Dam 4 - Farm	30/7/25	6.1	123	77	24	3	3.0	3.0	13	4.0
Dam 4 - Farm	22/10/25	6.4	138	86	27	4	3.0	3.0	13	4.0
Dam 4 - Farm	9/1/26	6.3	176	110	32	4	4.0	4.0	16	5.1

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	9/4/25	8.8	212	130	31	2	6.6	5.7	15	13.0
Dam 4 - Farm	30/7/25	6.1	123	77	24	3	3.0	3.0	13	4.0
Dam 4 - Farm	22/10/25	6.4	138	86	27	4	3.0	3.0	13	4.0
Dam 4 - Farm	9/1/26	6.3	176	110	32	4	4.0	4.0	16	5.1

Sample

MW1

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
MW1	9/4/25	4.1	332	210	40	30	9.1	15.0	13	6.0
MW1	30/7/25	4.5	305	190	47	16	6.5	11.0	20	4.0
MW1	22/10/25	4.7	274	170	52	13	5.0	9.1	20	3.0
MW1	9/1/26	4.7	338	210	44	20	9.5	16.0	20	6.1

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	9/4/25	4.1	332	210	40	30	9.1	15.0	13	6.0
MW1	30/7/25	4.5	305	190	47	16	6.5	11.0	20	4.0
MW1	22/10/25	4.7	274	170	52	13	5.0	9.1	20	3.0
MW1	9/1/26	4.7	338	210	44	20	9.5	16.0	20	6.1

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	9/4/25	4.1	332	210	40	30	9.1	15.0	13	6.0
MW1	30/7/25	4.5	305	190	47	16	6.5	11.0	20	4.0
MW1	22/10/25	4.7	274	170	52	13	5.0	9.1	20	3.0
MW1	9/1/26	4.7	338	210	44	20	9.5	16.0	20	6.1

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	9/4/25	4.1	332	210	40	30	9.1	15.0	13	6.0
MW1	30/7/25	4.5	305	190	47	16	6.5	11.0	20	4.0
MW1	22/10/25	4.7	274	170	52	13	5.0	9.1	20	3.0
MW1	9/1/26	4.7	338	210	44	20	9.5	16.0	20	6.1

Sample

MW10

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
MW10	9/4/25	4.3	173	110	38	0	0.7	5.3	12	0.7
MW10	30/7/25	4.6	148	92	33	0	1.0	5.0	13	0.9
MW10	22/10/25	4.5	143	89	32	0	0.5	5.0	11	1.0
MW10	9/1/26	4.5	154	96	32	1	0.8	4.0	13	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	9/4/25	4.3	173	110	38	0	0.7	5.3	12	0.7
MW10	30/7/25	4.6	148	92	33	0	1.0	5.0	13	0.9
MW10	22/10/25	4.5	143	89	32	0	0.5	5.0	11	1.0
MW10	9/1/26	4.5	154	96	32	1	0.8	4.0	13	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	9/4/25	4.3	173	110	38	0	0.7	5.3	12	0.7
MW10	30/7/25	4.6	148	92	33	0	1.0	5.0	13	0.9
MW10	22/10/25	4.5	143	89	32	0	0.5	5.0	11	1.0
MW10	9/1/26	4.5	154	96	32	1	0.8	4.0	13	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	9/4/25	4.3	173	110	38	0	0.7	5.3	12	0.7
MW10	30/7/25	4.6	148	92	33	0	1.0	5.0	13	0.9
MW10	22/10/25	4.5	143	89	32	0	0.5	5.0	11	1.0
MW10	9/1/26	4.5	154	96	32	1	0.8	4.0	13	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)	9/4/25	5.5	184	110	40	4	5.2	3.0	15	3.0
MW11 (Off Old Telegraph Rd)	30/7/25	5.8	243	150	40	21	15.0	5.3	20	5.0
MW11 (Off Old Telegraph Rd)	22/10/25	5.9	238	150	37	20	16.0	5.0	16	4.0
MW11 (Off Old Telegraph Rd)	9/1/26	5.7	202	130	37	7	7.1	4.0	18	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
MW11 (Off Old Telegraph Rd)	9/4/25	5.5	184	110	40	4	5.2	3.0	15	3.0
MW11 (Off Old Telegraph Rd)	30/7/25	5.8	243	150	40	21	15.0	5.3	20	5.0
MW11 (Off Old Telegraph Rd)	22/10/25	5.9	238	150	37	20	16.0	5.0	16	4.0
MW11 (Off Old Telegraph Rd)	9/1/26	5.7	202	130	37	7	7.1	4.0	18	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
MW11 (Off Old Telegraph Rd)	9/4/25	5.5	184	110	40	4	5.2	3.0	15	3.0
MW11 (Off Old Telegraph Rd)	30/7/25	5.8	243	150	40	21	15.0	5.3	20	5.0
MW11 (Off Old Telegraph Rd)	22/10/25	5.9	238	150	37	20	16.0	5.0	16	4.0
MW11 (Off Old Telegraph Rd)	9/1/26	5.7	202	130	37	7	7.1	4.0	18	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
MW11 (Off Old Telegraph Rd)	9/4/25	5.5	184	110	40	4	5.2	3.0	15	3.0
MW11 (Off Old Telegraph Rd)	30/7/25	5.8	243	150	40	21	15.0	5.3	20	5.0
MW11 (Off Old Telegraph Rd)	22/10/25	5.9	238	150	37	20	16.0	5.0	16	4.0
MW11 (Off Old Telegraph Rd)	9/1/26	5.7	202	130	37	7	7.1	4.0	18	4.0

Sample

MW12

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
MW12	9/4/25	5.8	129	81	23	4	3.0	2.0	10	0.8
MW12	30/7/25	5.0	114	71	22	6	3.0	1.0	14	0.7
MW12	22/10/25	4.7	111	69	22	7	1.0	2.0	12	0.8
MW12	9/1/26	5.0	125	78	23	8	3.0	2.0	14	0.7

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	9/4/25	5.8	129	81	23	4	3.0	2.0	10	0.8
MW12	30/7/25	5.0	114	71	22	6	3.0	1.0	14	0.7
MW12	22/10/25	4.7	111	69	22	7	1.0	2.0	12	0.8
MW12	9/1/26	5.0	125	78	23	8	3.0	2.0	14	0.7

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	9/4/25	5.8	129	81	23	4	3.0	2.0	10	0.8
MW12	30/7/25	5.0	114	71	22	6	3.0	1.0	14	0.7
MW12	22/10/25	4.7	111	69	22	7	1.0	2.0	12	0.8
MW12	9/1/26	5.0	125	78	23	8	3.0	2.0	14	0.7

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	9/4/25	5.8	129	81	23	4	3.0	2.0	10	0.8
MW12	30/7/25	5.0	114	71	22	6	3.0	1.0	14	0.7
MW12	22/10/25	4.7	111	69	22	7	1.0	2.0	12	0.8
MW12	9/1/26	5.0	125	78	23	8	3.0	2.0	14	0.7

Sample

MW6 (Office)

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
MW6 (Office)	9/4/25	7.2	331	210	80	0	4.0	3.0	36	2.0
MW6 (Office)	30/7/25	8.2	323	200	78	0	4.0	3.0	46	2.0
MW6 (Office)	22/10/25	8.0	292	180	69	0	4.0	4.0	37	2.0
MW6 (Office)	9/1/26	7.9	275	170	61	0	5.0	4.0	38	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)	9/4/25	7.2	331	210	80	0	4.0	3.0	36	2.0
MW6 (Office)	30/7/25	8.2	323	200	78	0	4.0	3.0	46	2.0
MW6 (Office)	22/10/25	8.0	292	180	69	0	4.0	4.0	37	2.0
MW6 (Office)	9/1/26	7.9	275	170	61	0	5.0	4.0	38	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)	9/4/25	7.2	331	210	80	0	4.0	3.0	36	2.0
MW6 (Office)	30/7/25	8.2	323	200	78	0	4.0	3.0	46	2.0
MW6 (Office)	22/10/25	8.0	292	180	69	0	4.0	4.0	37	2.0
MW6 (Office)	9/1/26	7.9	275	170	61	0	5.0	4.0	38	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)	9/4/25	7.2	331	210	80	0	4.0	3.0	36	2.0
MW6 (Office)	30/7/25	8.2	323	200	78	0	4.0	3.0	46	2.0
MW6 (Office)	22/10/25	8.0	292	180	69	0	4.0	4.0	37	2.0
MW6 (Office)	9/1/26	7.9	275	170	61	0	5.0	4.0	38	2.0

Sample

MW7

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
MW7	9/4/25	5.4	176	110	30	6	3.0	2.0	19	0.7
MW7	30/7/25	4.8	235	150	48	6	6.3	4.0	29	1.0
MW7	22/10/25	5.2	176	110	30	5	3.0	3.0	19	0.8
MW7	9/1/26	5.3	207	130	33	5	5.4	4.0	23	0.9

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	9/4/25	5.4	176	110	30	6	3.0	2.0	19	0.7
MW7	30/7/25	4.8	235	150	48	6	6.3	4.0	29	1.0
MW7	22/10/25	5.2	176	110	30	5	3.0	3.0	19	0.8
MW7	9/1/26	5.3	207	130	33	5	5.4	4.0	23	0.9

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	9/4/25	5.4	176	110	30	6	3.0	2.0	19	0.7
MW7	30/7/25	4.8	235	150	48	6	6.3	4.0	29	1.0
MW7	22/10/25	5.2	176	110	30	5	3.0	3.0	19	0.8
MW7	9/1/26	5.3	207	130	33	5	5.4	4.0	23	0.9

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	9/4/25	5.4	176	110	30	6	3.0	2.0	19	0.7
MW7	30/7/25	4.8	235	150	48	6	6.3	4.0	29	1.0
MW7	22/10/25	5.2	176	110	30	5	3.0	3.0	19	0.8
MW7	9/1/26	5.3	207	130	33	5	5.4	4.0	23	0.9

Sample

MW8

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
MW8	9/4/25	4.2	236	150	60	1	2.0	4.0	21	0.0
MW8	30/7/25	4.3	246	150	60	1	2.0	3.0	27	0.0
MW8	22/10/25	4.2	244	150	60	1	0.8	3.0	25	0.0
MW8	9/1/26	4.3	260	160	61	2	2.0	4.0	28	0.0

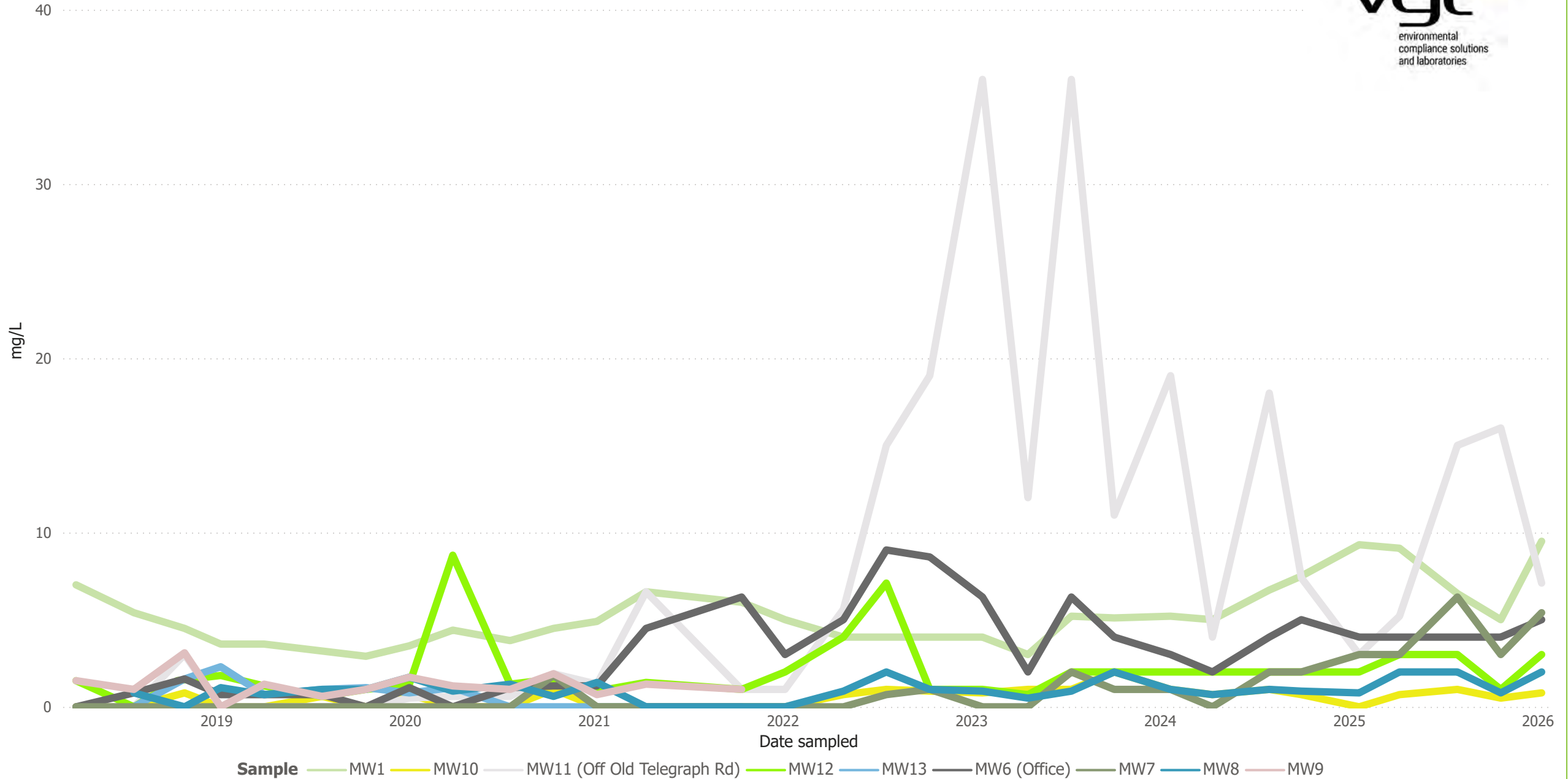
Sample	Date	Average of pH	Average of Electrical Conductivity	Average of Total Dissolved Solids	Average of Chloride	Average of Sulphate	Average of Calcium	Average of Magnesium	Average of Sodium	Average of Potassium
MW8	9/4/25	4.2	236	150	60	1	2.0	4.0	21	0.0
MW8	30/7/25	4.3	246	150	60	1	2.0	3.0	27	0.0
MW8	22/10/25	4.2	244	150	60	1	0.8	3.0	25	0.0
MW8	9/1/26	4.3	260	160	61	2	2.0	4.0	28	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	9/4/25	4.2	236	150	60	1	2.0	4.0	21	0.0
MW8	30/7/25	4.3	246	150	60	1	2.0	3.0	27	0.0
MW8	22/10/25	4.2	244	150	60	1	0.8	3.0	25	0.0
MW8	9/1/26	4.3	260	160	61	2	2.0	4.0	28	0.0

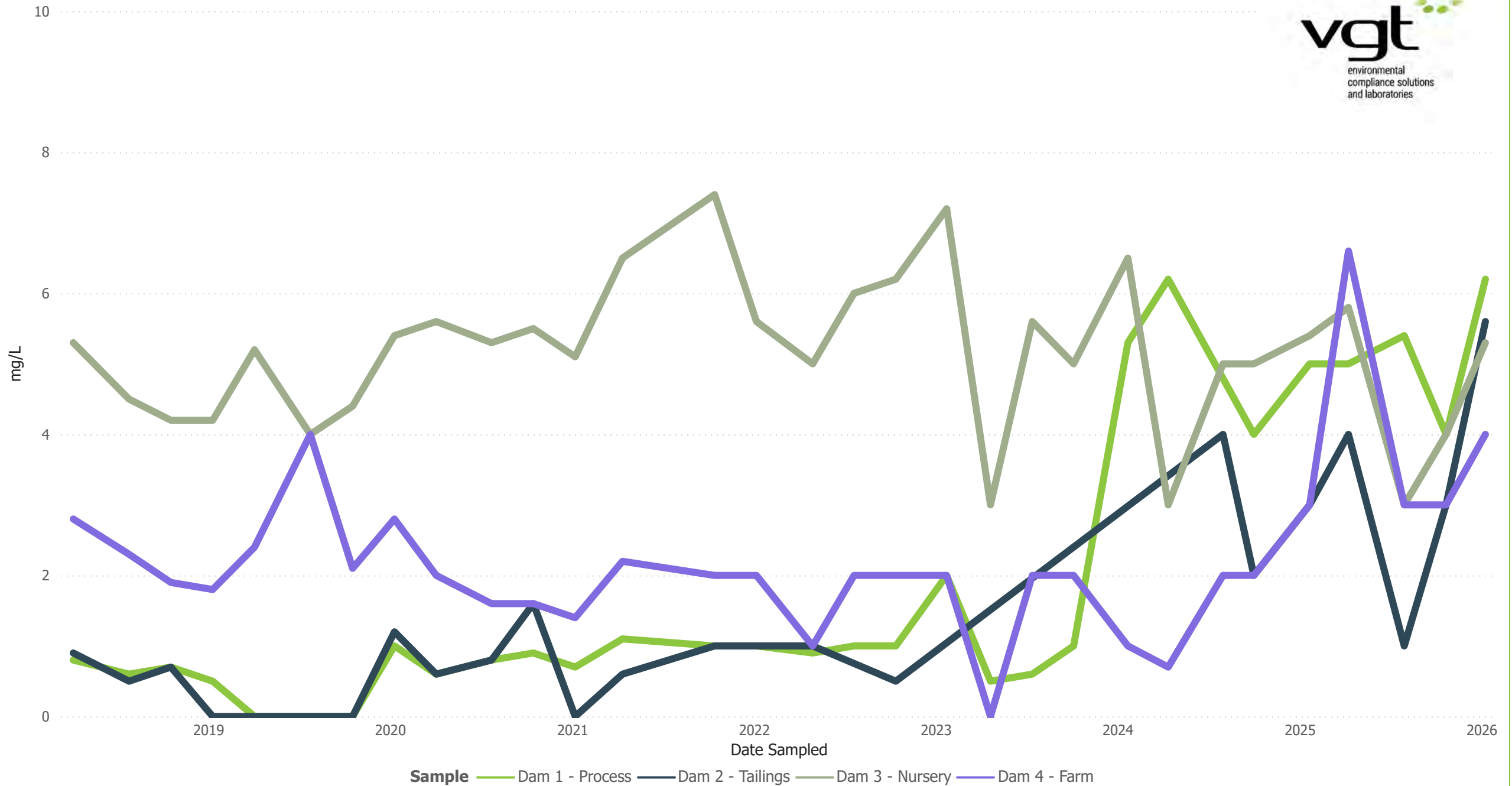
Sample	Date	Max of pH	Max of Electrical Conductivity	Max of Total Dissolved Solids	Max of Chloride	Max of Sulphate	Max of Calcium	Max of Magnesium	Max of Sodium	Max of Potassium
MW8	9/4/25	4.2	236	150	60	1	2.0	4.0	21	0.0
MW8	30/7/25	4.3	246	150	60	1	2.0	3.0	27	0.0
MW8	22/10/25	4.2	244	150	60	1	0.8	3.0	25	0.0
MW8	9/1/26	4.3	260	160	61	2	2.0	4.0	28	0.0

Water Quality Trends

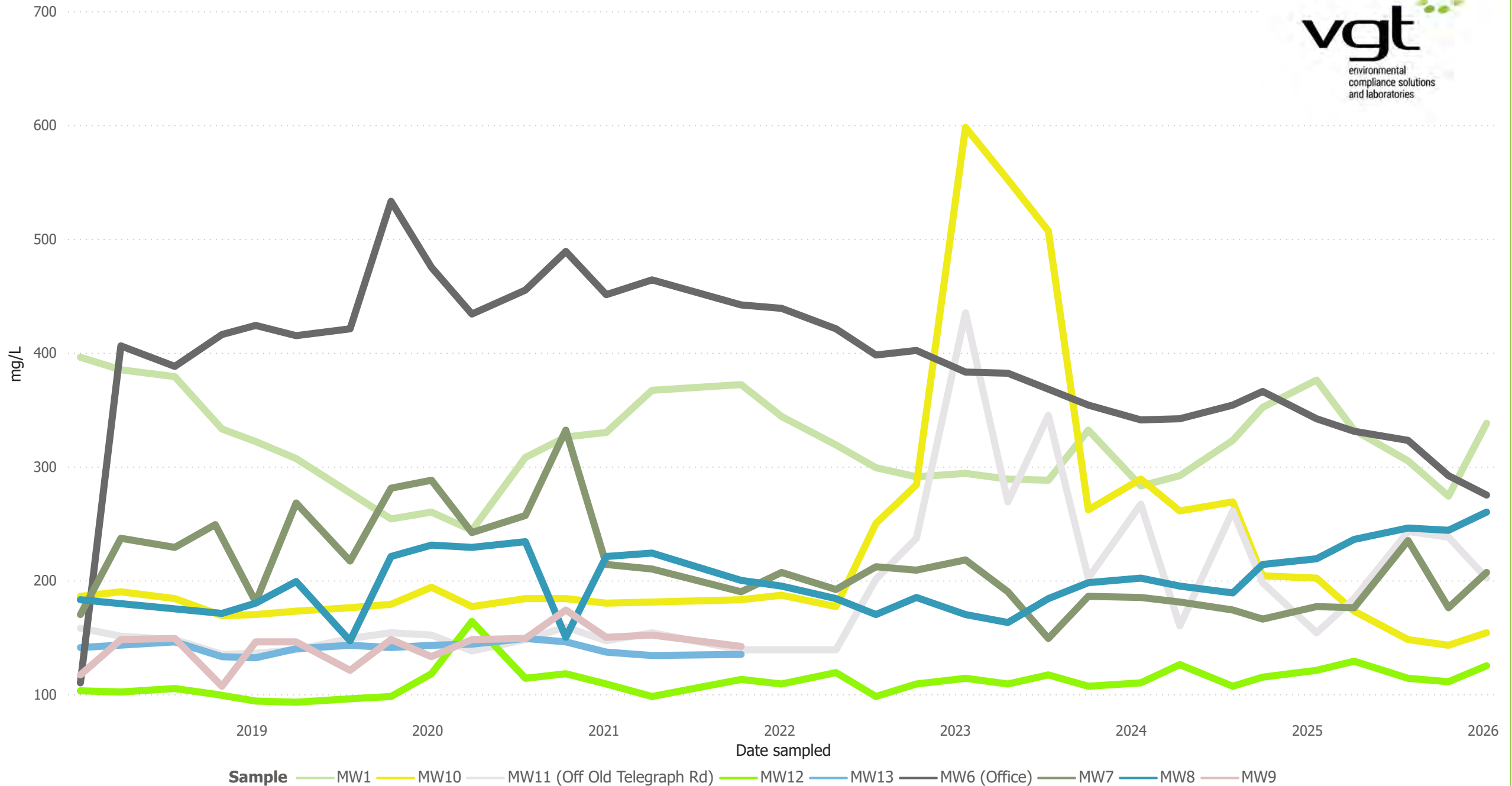
Calcium



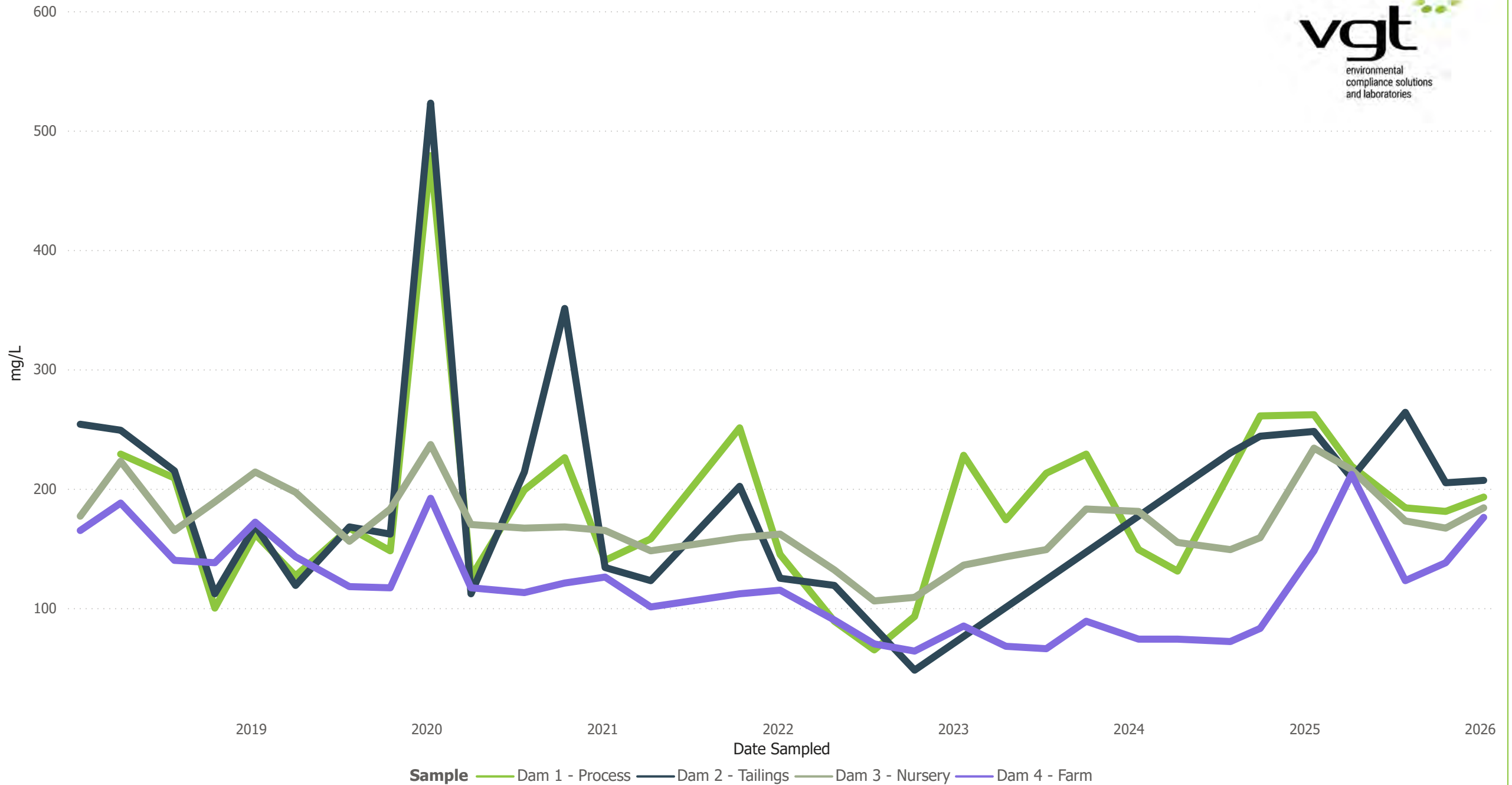
Calcium



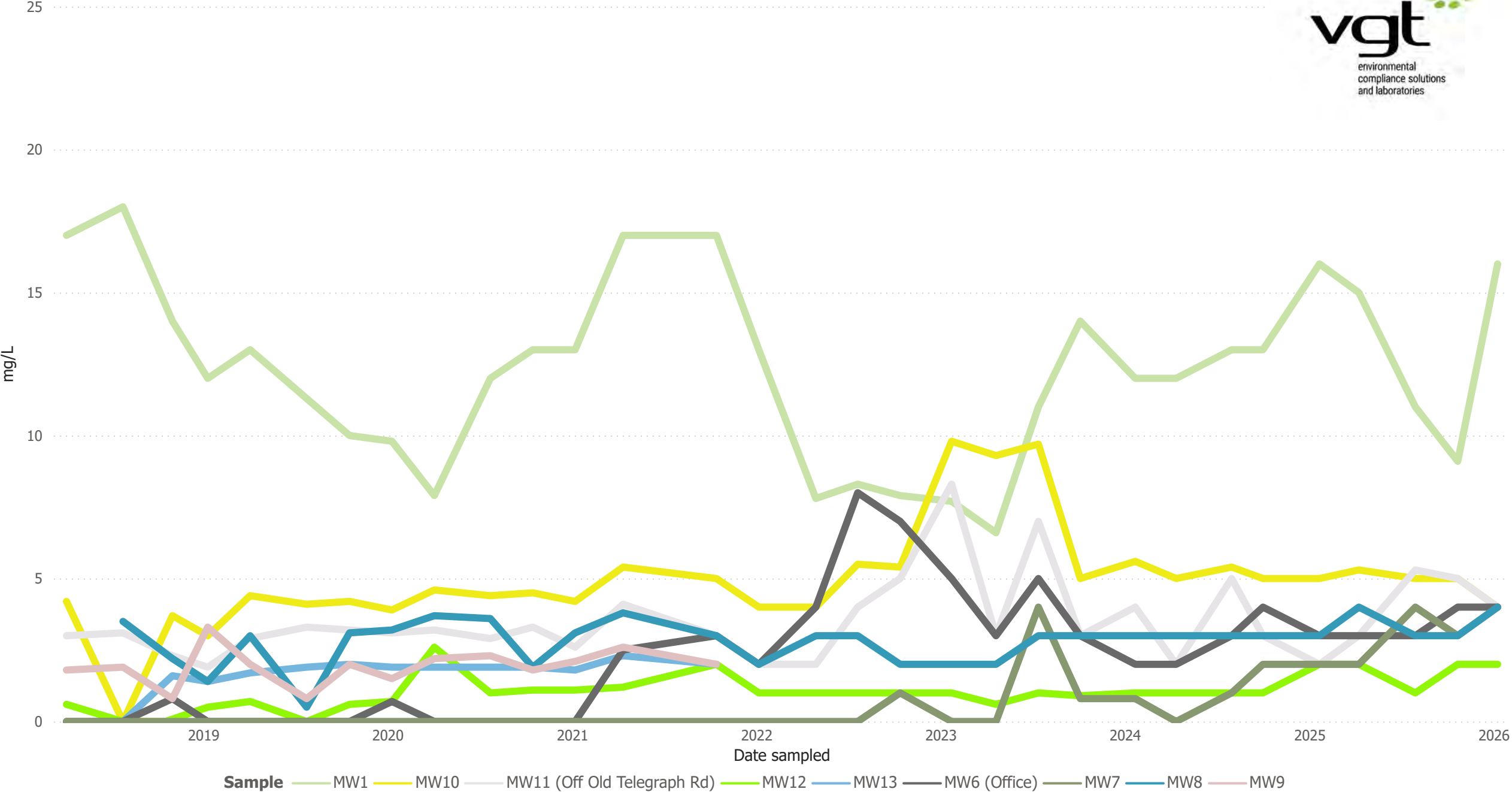
Electrical Conductivity



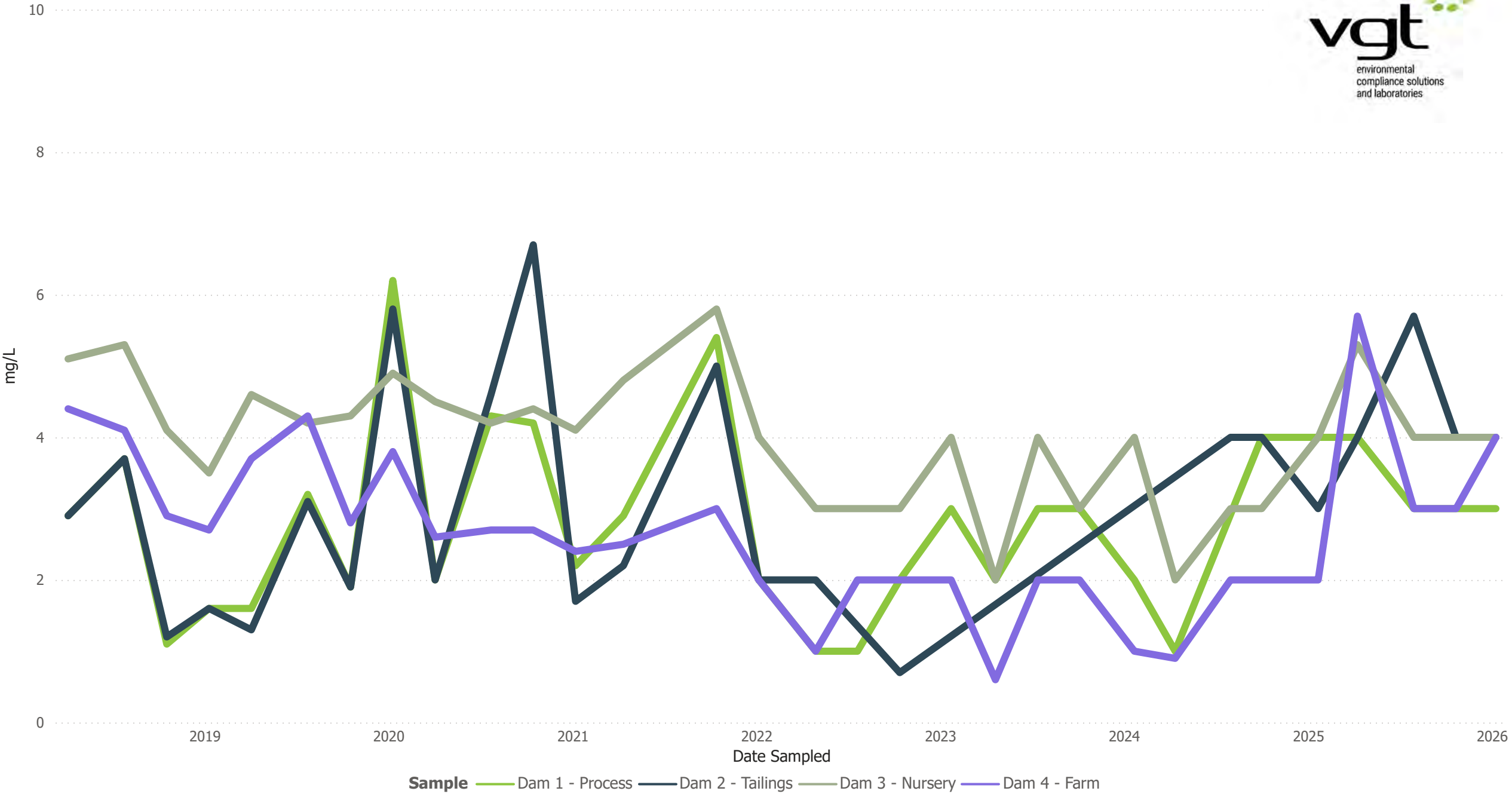
Electrical Conductivity



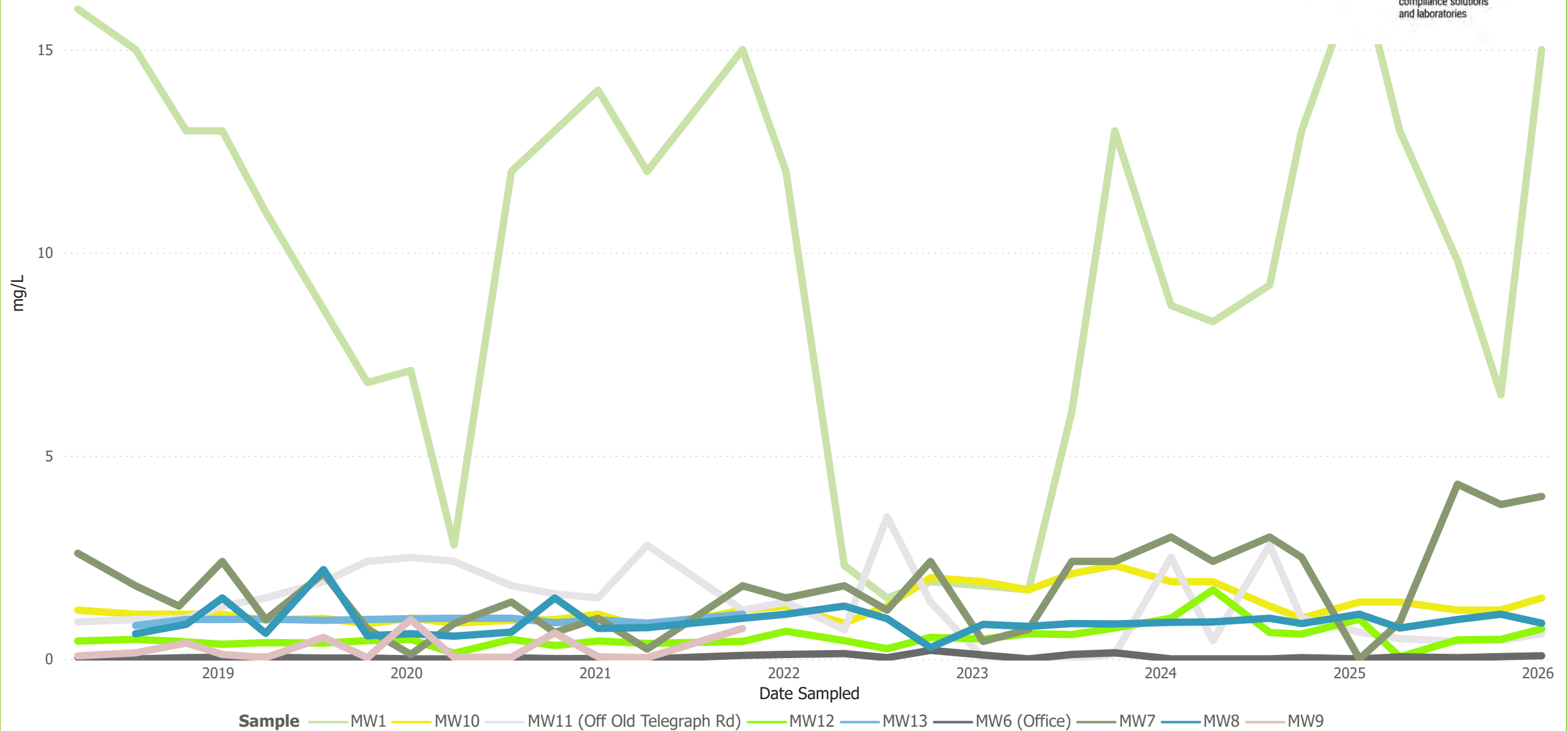
Magnesium



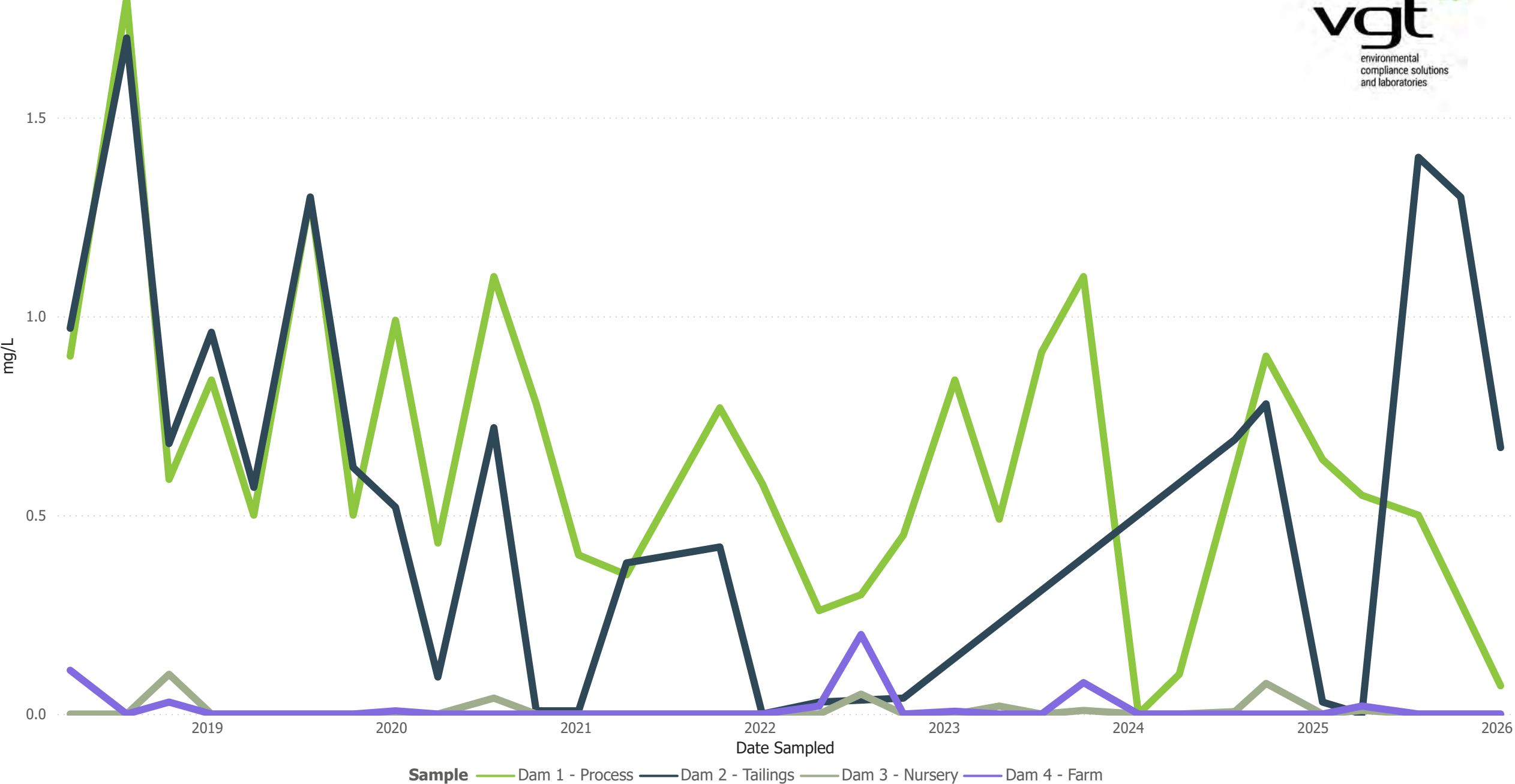
Magnesium



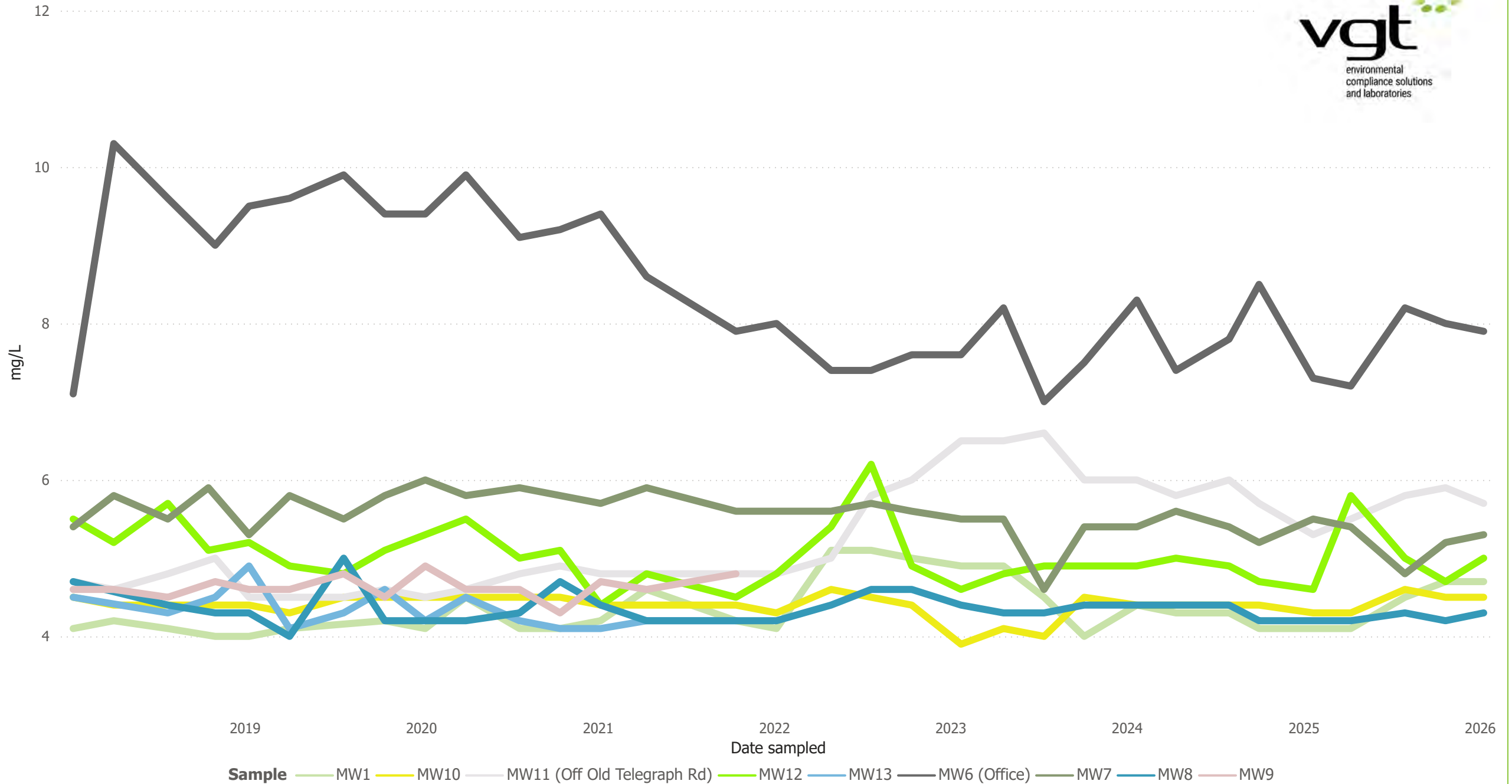
Nitrate as N



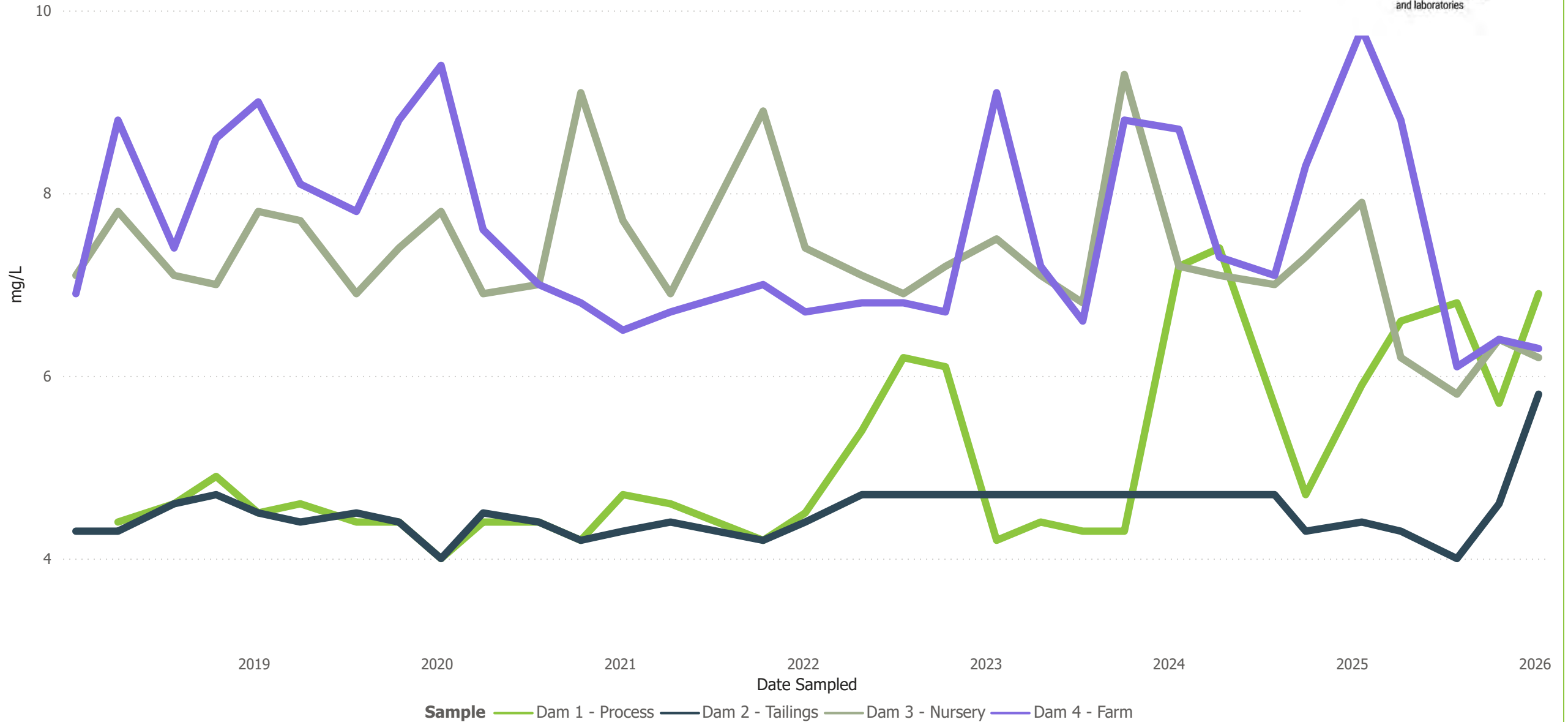
Nitrate as N



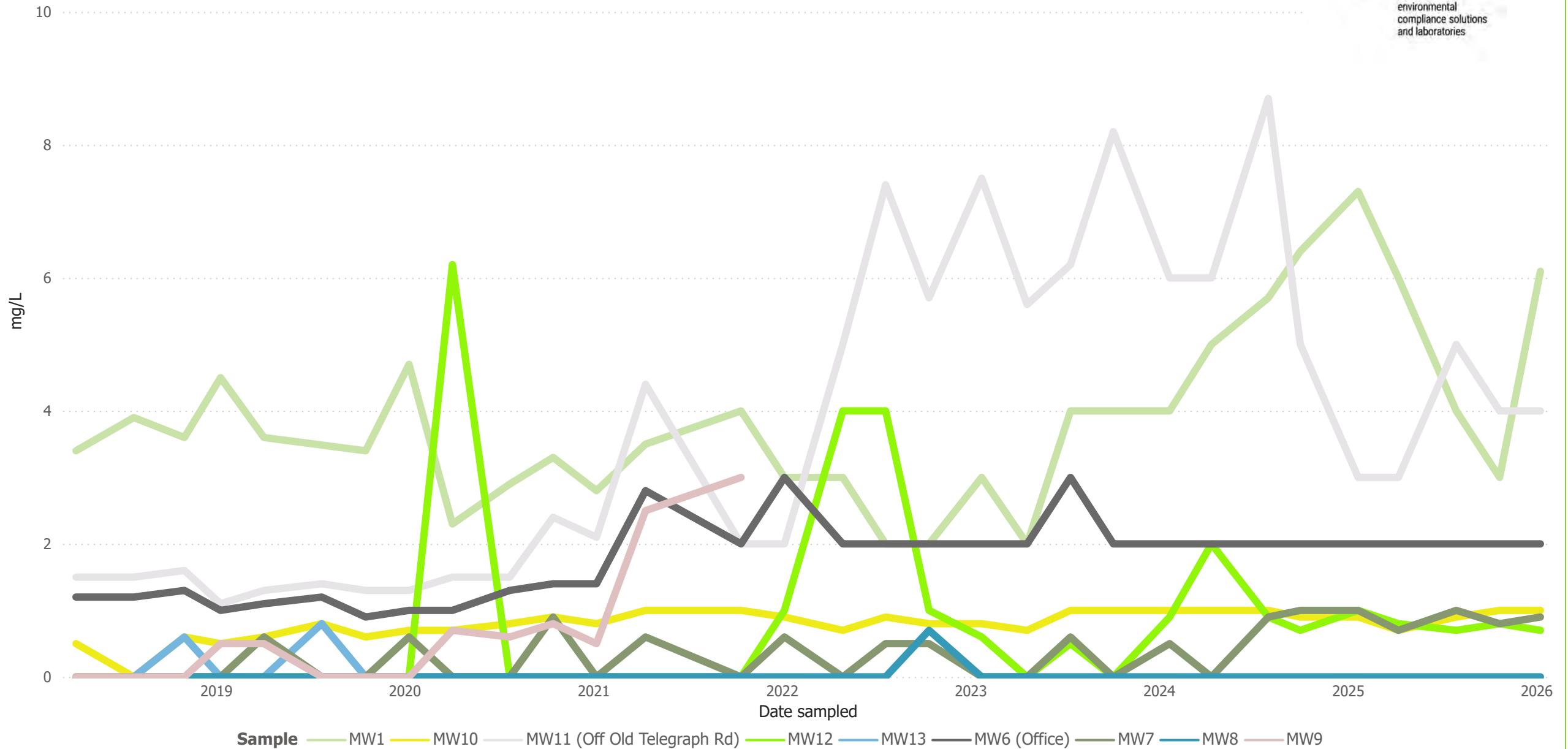
pH



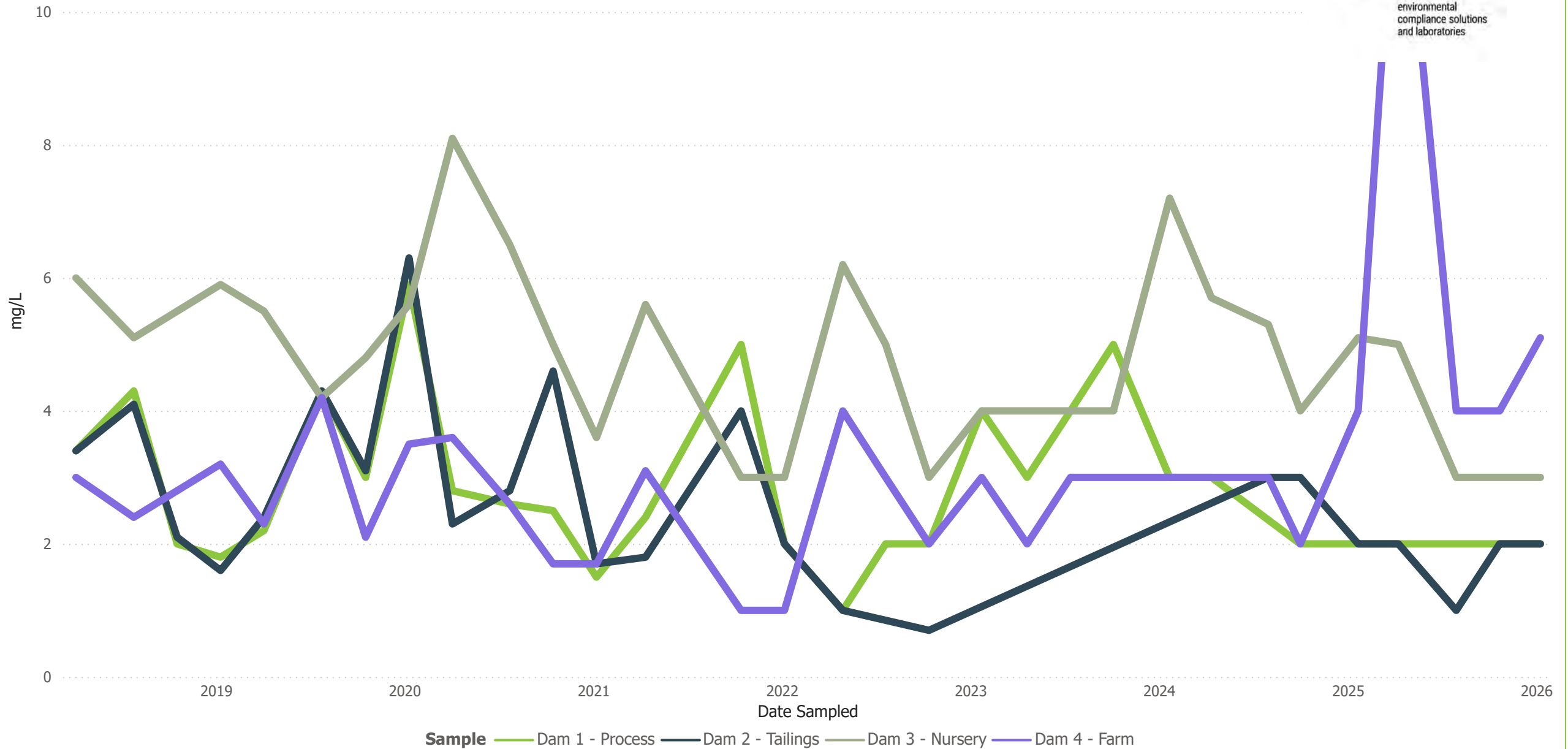
pH



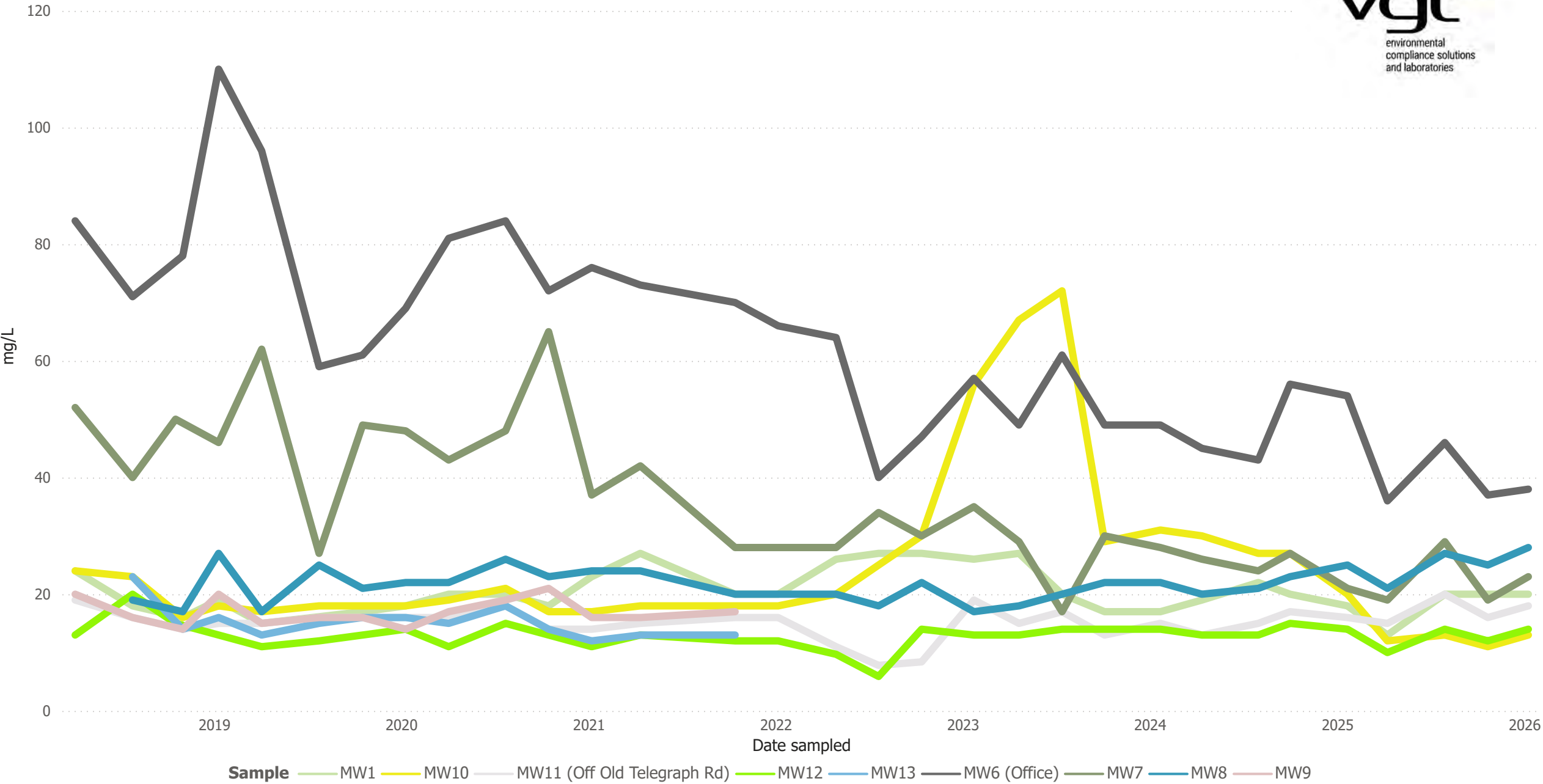
Potassium



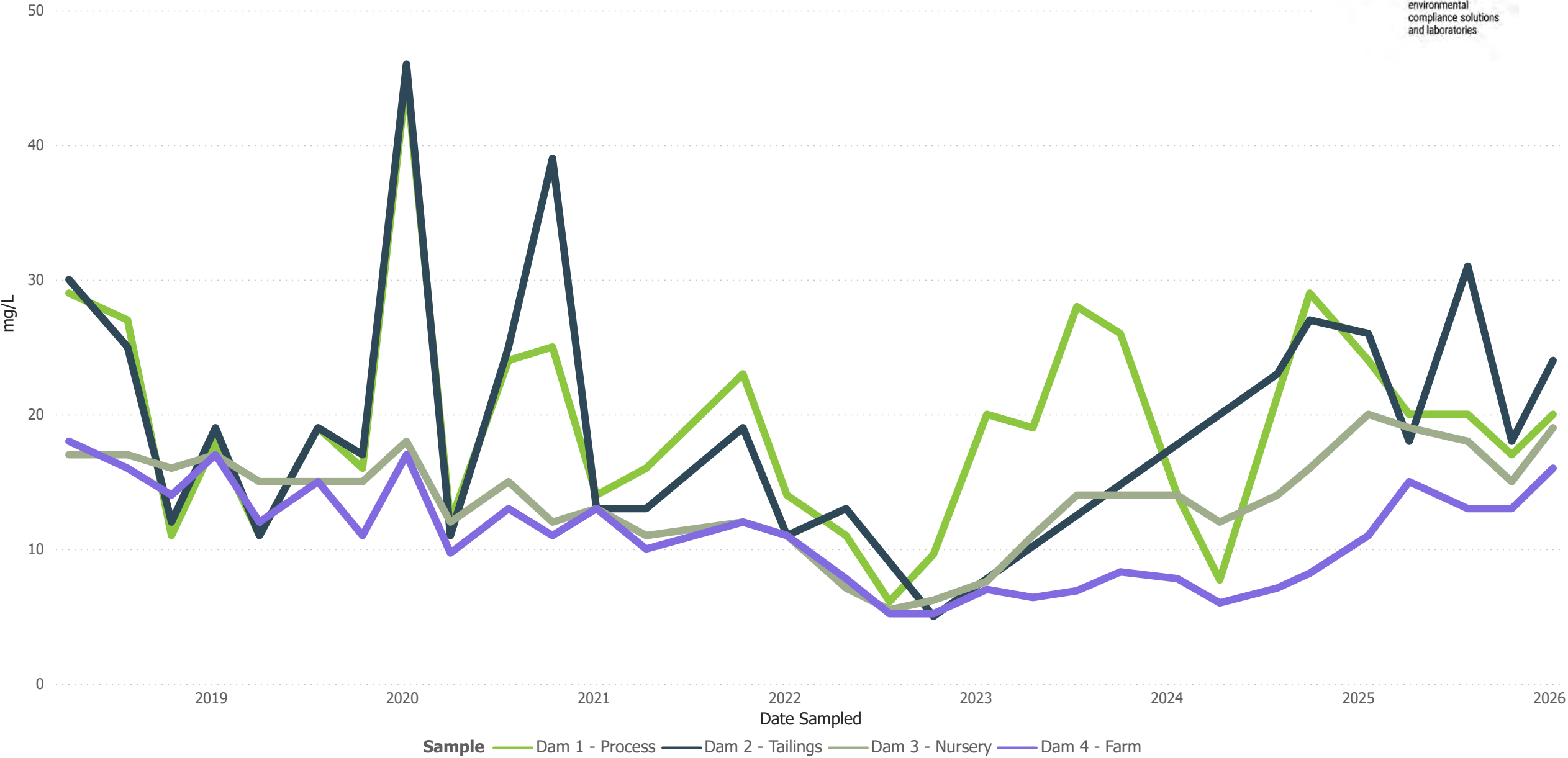
Potassium



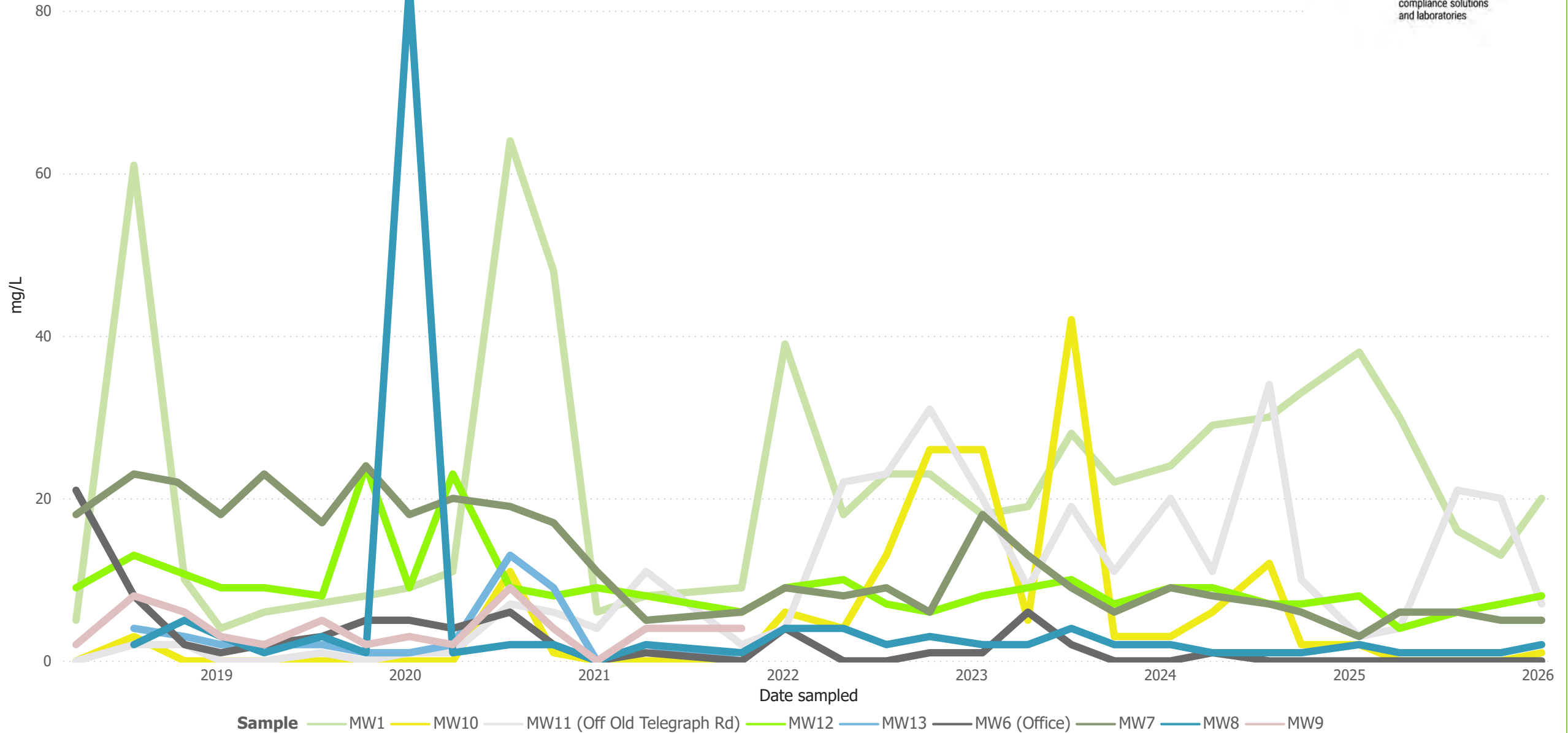
Sodium



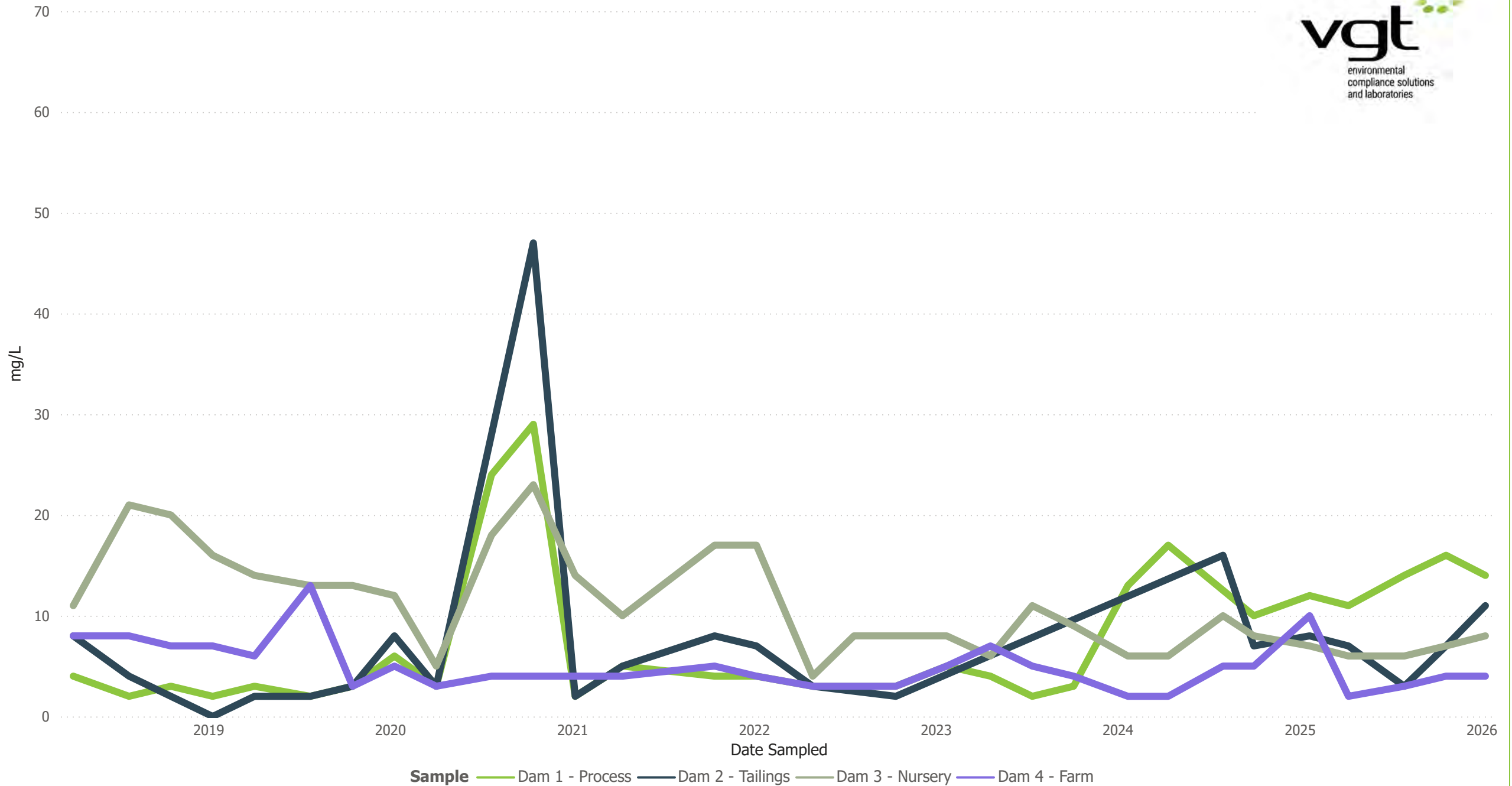
Sodium



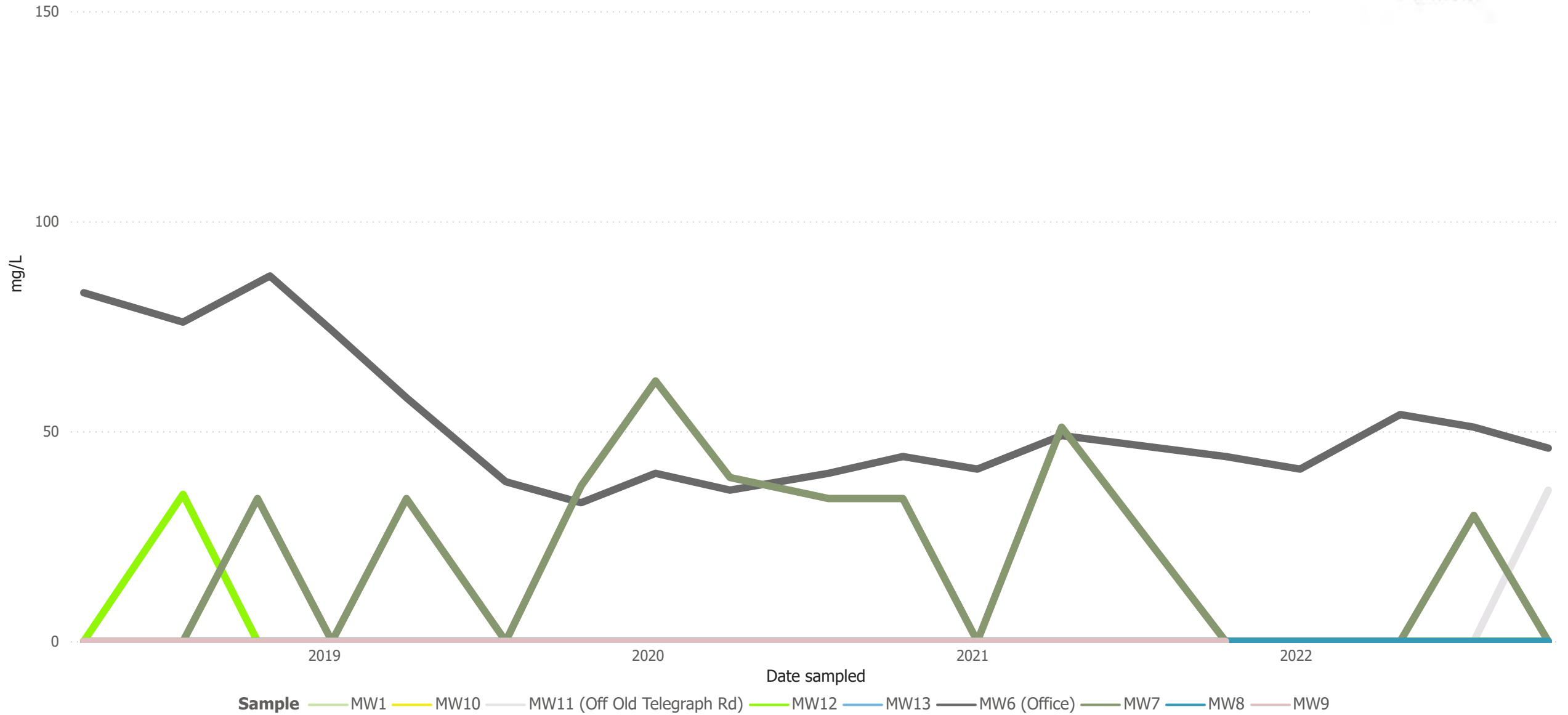
Sulphate



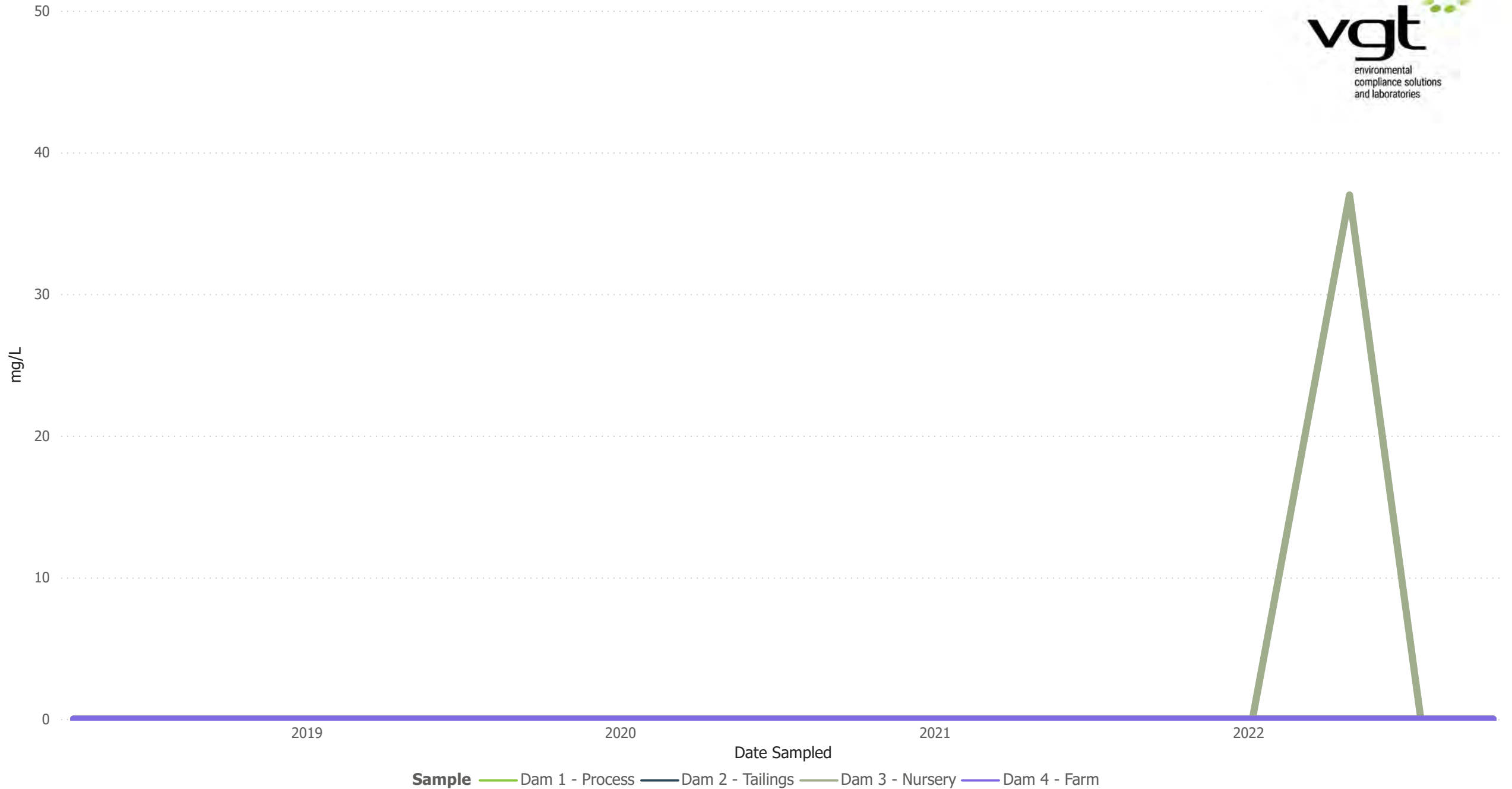
Sulphate



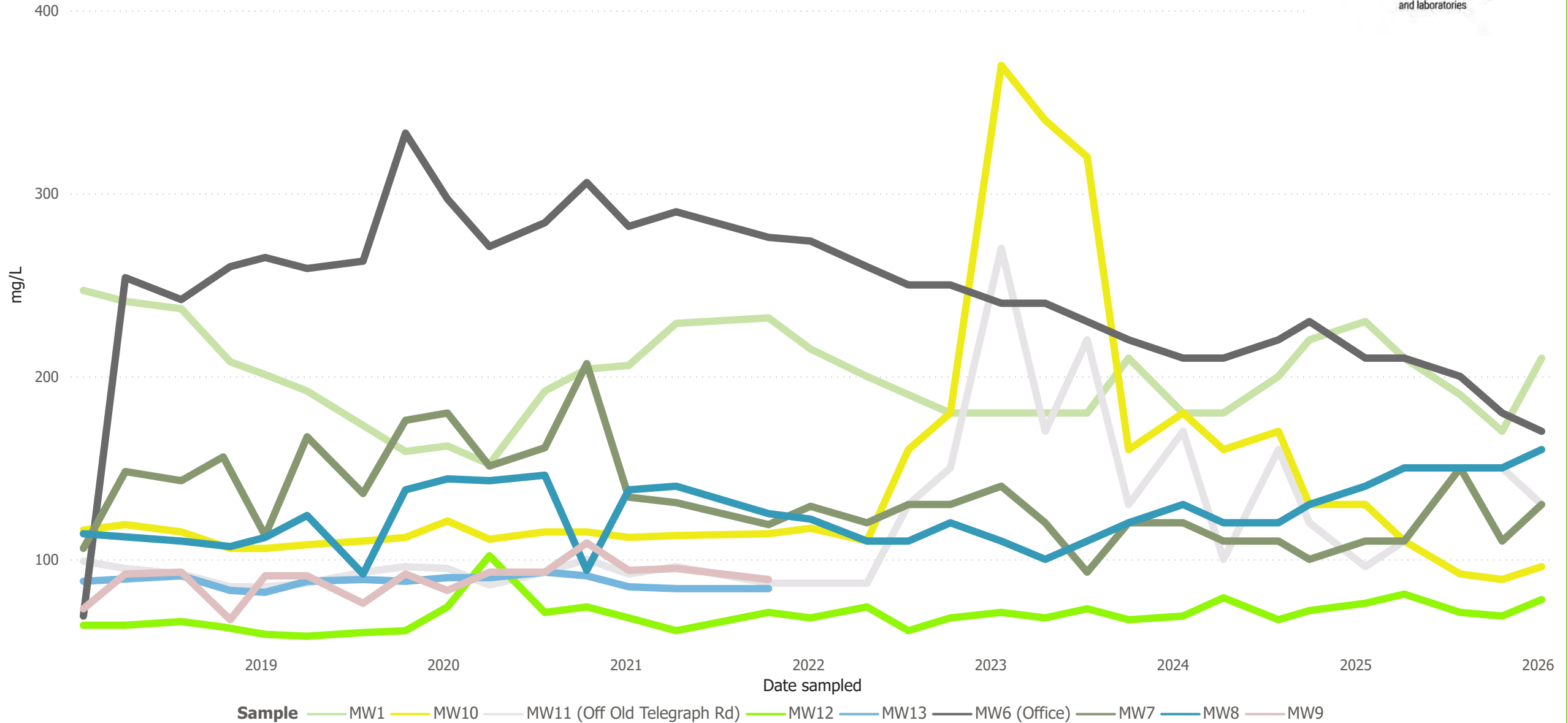
Total Alkalinity



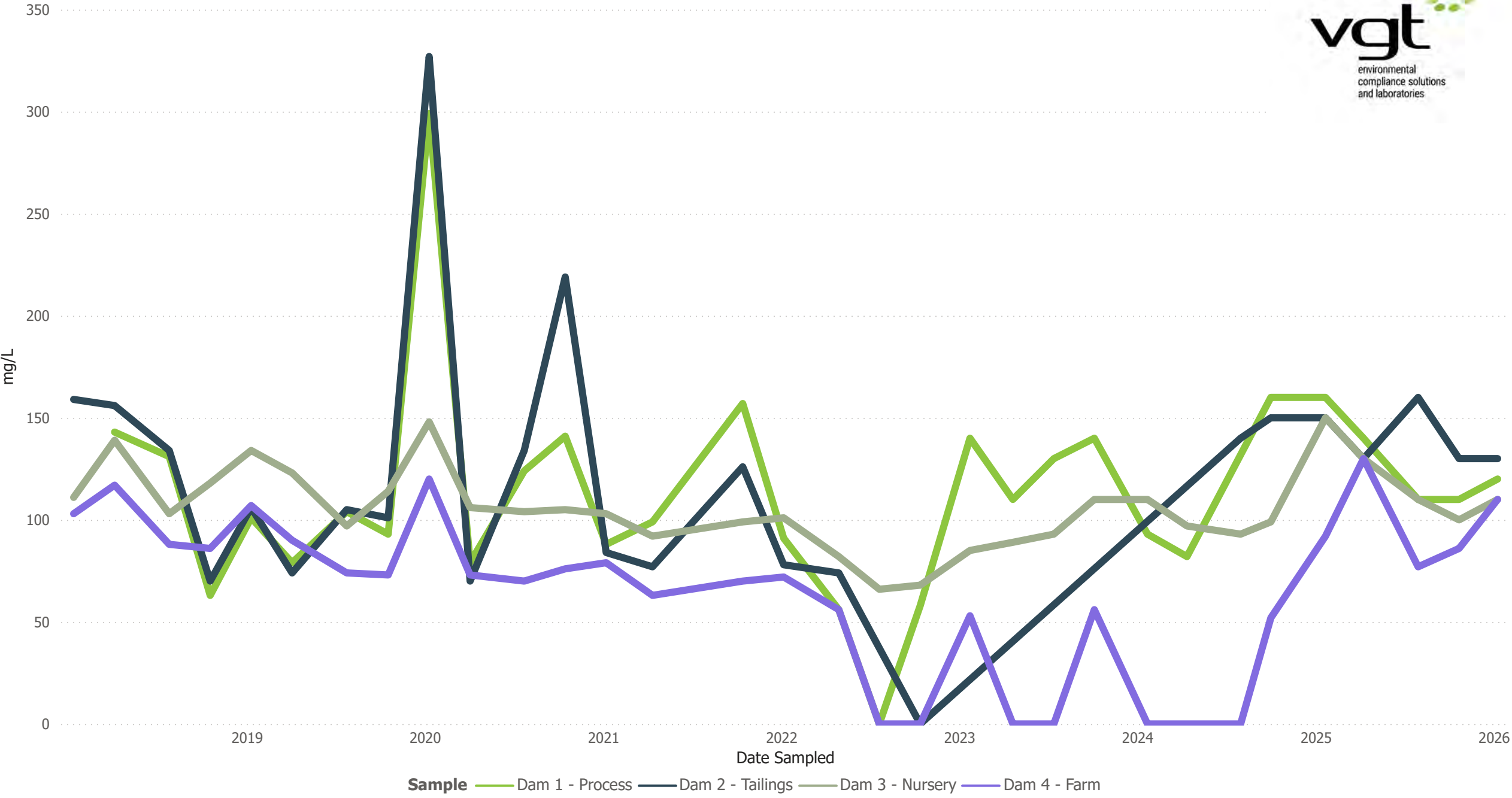
Total Alkalinity



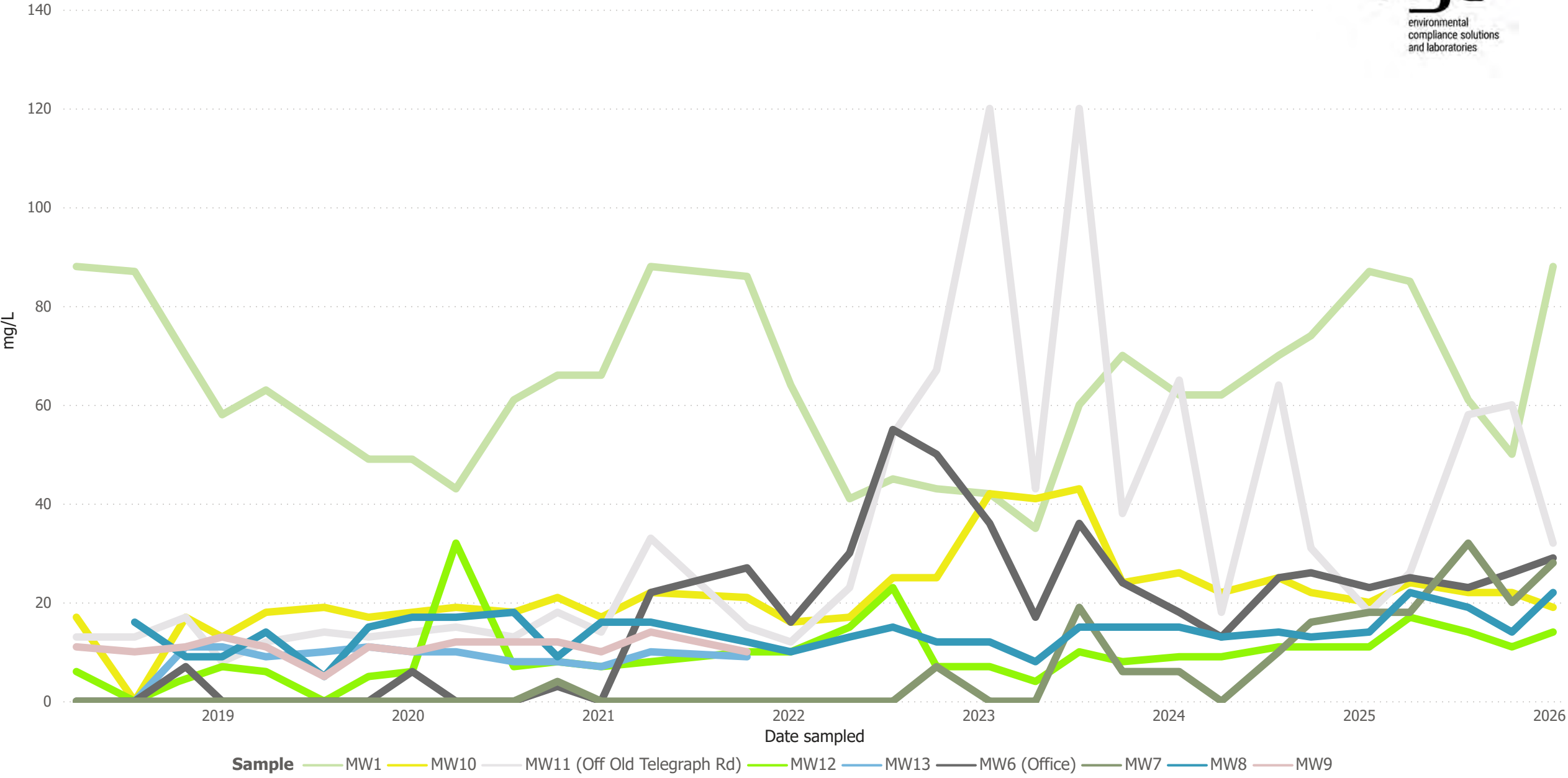
Total Dissolved Solids



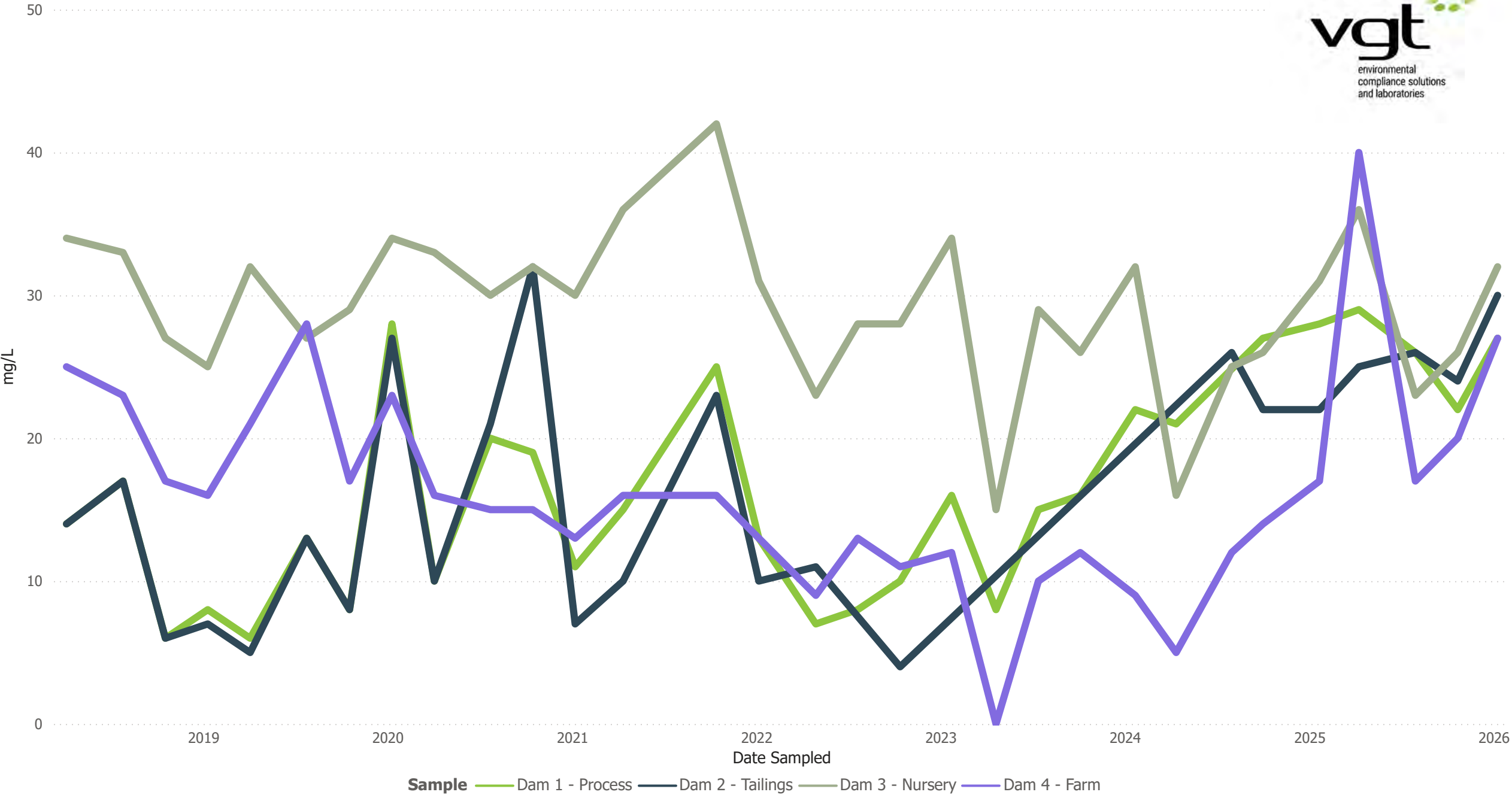
Total Dissolved Solids



Total Hardness



Total Hardness



Appendix F

Air Quality Sampling Procedures



WORK INSTRUCTION

WORK INSTRUCTION TITLE: **HVAS OPERATION AND SAMPLING**

QUALITY PROCEDURE NUMBER: **VGTLAB-QWI57**

Amend. No	Date	Description of Amendment
0	16/02/2023	Issue A
1		
2		
3		
4		
5		
6		
7		
8		

THIS IS AN UNCONTROLLED COPY IF PRINTED.

HVAS OPERATION & SAMPLING

Where to find what to record:

1. Run Time:

Do this when putting paper on and when taking paper off.

Press SELECT to enter menu (figure 2.).

Press SELECT again (Status screen).

Use down arrow until "Runtime min" appears on screen (figure 3).

Record runtime in 'Start Hrs Run'/'End Hrs Run'.

Press EXIT to return to front menu.

Display should be in standby with next run time displayed.

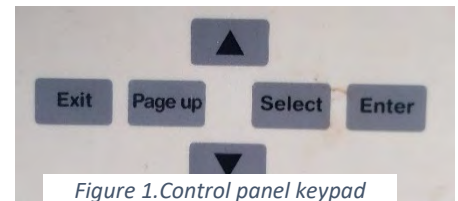


Figure 1. Control panel keypad

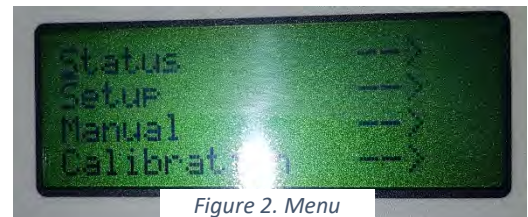


Figure 2. Menu

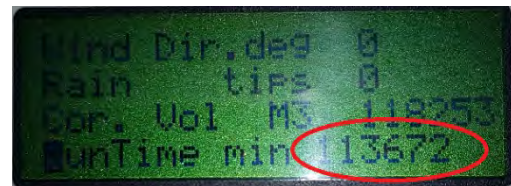


Figure 3. "RunTime Min" screen

2. Swapping Out Papers:

Record details

Unscrew hood (figure 4.)

Carefully remove paper.

FOLD PAPER -dust to the inside

Put in envelope.

Place new paper between blue screen.

How to place filter on screen:

1. Number facing DOWN.
2. Paper on mesh
3. Spongy lid on top



Figure 4. Unscrewing lid

Avoid excessive touching of paper.

Handle papers with clean hands.

Figure 5. Fold dust to the INSIDE

Do not crease paper before placing on machine.

4. Close lid.
5. Check next 'run time'
6. Lock up.

Finished.

3. Record:

Technician Name: *Name of person placing/removing filter paper.*

Weather: *e.g. rainy, overcast, sunny.*

Temperature On: *Temperature on the day paper is placed.*

Initial Flow Rate: *Operate the sampler for 5 min and record the initial flow indicated. (Usually between 67-69)*

Start Hrs: *Number displayed after "RunTime min" recorded before paper is placed.*

Date and Time On: *Date and time paper is placed on HVAS.*

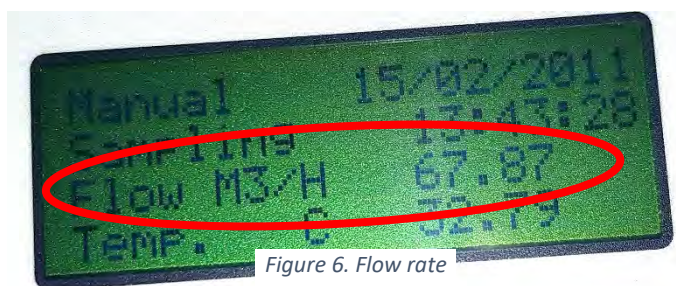
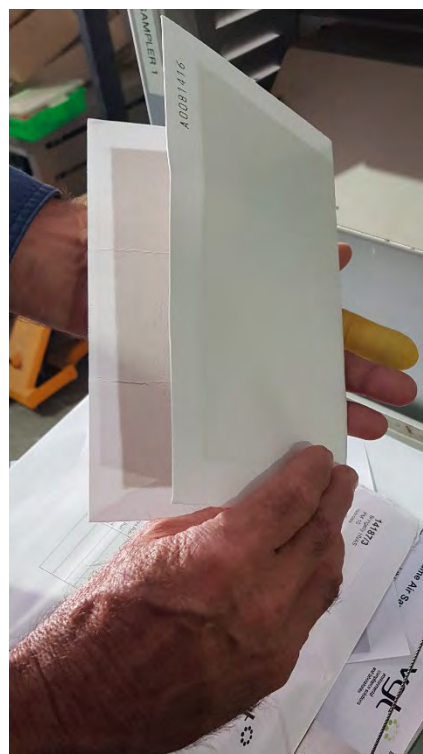
Date Operating: *Date HVAS is running.*

Temperature Off: *Temperature on the day paper is removed.*

Final Flow Rate: *Operate the sampler for 5 min and record the initial flow indicated. (Usually between 67-69)*

End Hrs: *Number displayed after "RunTime min", recorded after paper is removed. (There should be a difference of 1439-1441 between Start and End numbers)*

Date and Time Off: *Date and time paper is removed from HVAS*



Activities on site during operating period: *E.g. truck movement levels-high, low. Mowing, hazard reduction burns etc.*

Laboratory Sample ID



High Volume Air Sampler Papers

Lab Use Only

Box	56
Paper no	A00814
Client	ABC Quarry
Site	Mars

Complete Prior Placing Paper

Instrument location and operational conditions compliant?	☒ Yes / ☐ No
HVAS Size Selective Inlet:	TSP / <u>PM10</u> / PM2.5
Technician Name	Joe Bloggs
Weather	Light showers
Temperature On (°C)	29.3
Initial Flow Rate (m³/min)	67.9
Start Hrs Run	115237
Date and Time On	21/03/2015 14:30
Date Operating (Sampling)	24/03/2015

Complete After Removing Paper

Temperature Off (°C)	26.1
Final Flow Rate (m³/min)	67.8
End Hrs Run	116677
Date and Time Off	26/03/2015 11:59
Activities on site during sampling period i.e. truck movements, grass cutting, hazard reduction burns	slashing, screening, trail bikes nearby

Figure 7. Example of Filled in Envelope

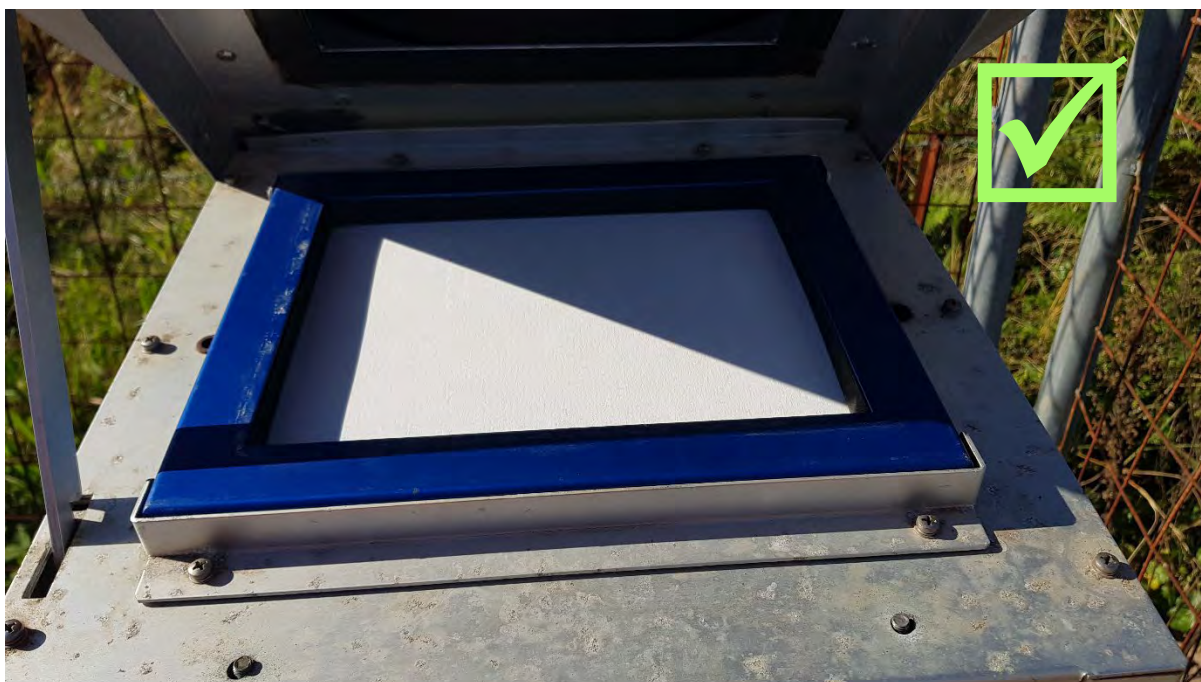


Figure 8. A correctly installed HVAS filter paper

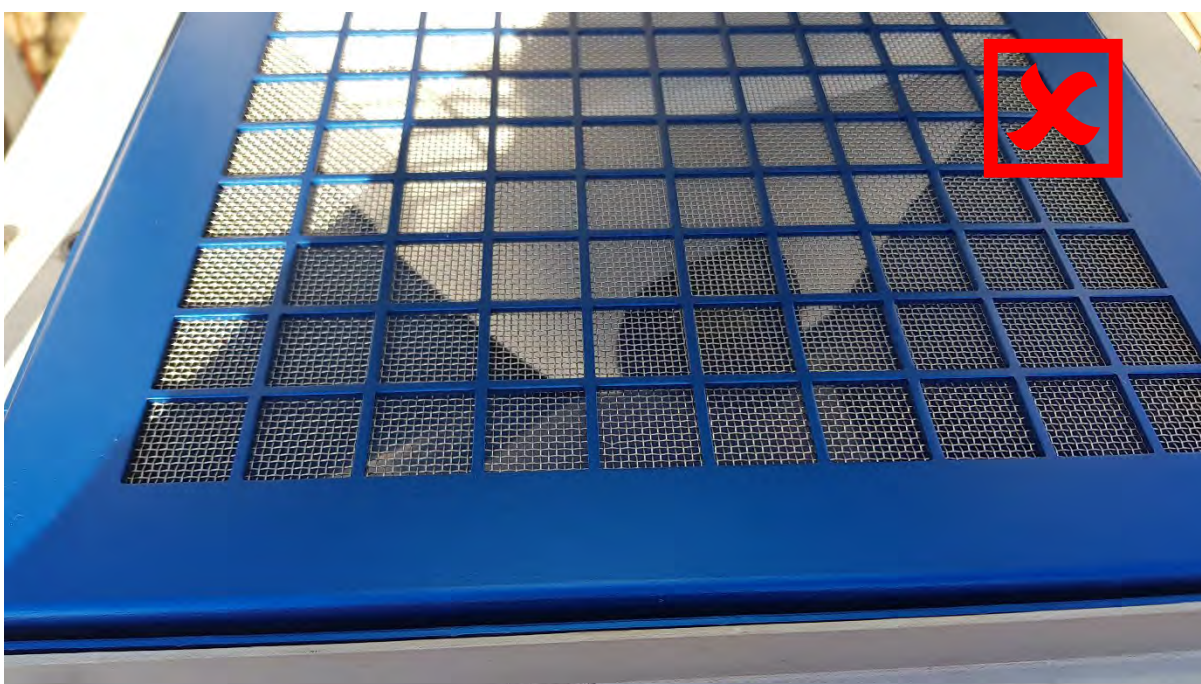


Figure 9. An example of an incorrectly installed HVAS filter paper.



WORK INSTRUCTION

Work Instruction Title: **DUST SAMPLING**

Quality Procedure Number: **VGTLAB-QWI15**

Amend. No	Date	Description of Amendment
0	19/5/03	Issue A
1	15/3/2005	Add figures, spelling errors, page formatting
2	9/11/05	As per Oct 2005 NATA assessment findings
3	28/2/06	As per NATA letter 23/2/06
4	19/3/2007	New logo
5	16/9/07	AS3580.1.1
6	14/05/2008	As per Audit 21
7	22/04/09	As per Audit 23
8	19/07/13	As per Audit 38
9	28/5/15	As per Audit 43
10	7/6/16	As per Audit 49
11	06/04/2021	As per Audit 75, formatting

THIS IS AN UNCONTROLLED COPY IF PRINTED.

1. Scope

This method is adapted from the Australian Standard AS3580.10.1. It sets out the sampling of particulate matter, which is deposited from the atmosphere for determination of insoluble solids, ash, and combustible matter. It provides a means for measuring the mean concentration of particulate matter in air over a sampling period, normally one month.

2. Principle

Over a given sampling period, particles, which settle from the ambient air, are collected in a vessel and retained together with any rainwater. The sample is sieved to remove any extraneous matter and the filtrate containing the deposited matter is quantitatively transferred to a filtration apparatus whereby determination of insoluble solids, ash, and combustible matter can be made.

3. References

- AS3580.10.1 Determination of particulates- Deposited Matter-Gravimetric method
- AS3580.1.1 Methods for sampling and analysis of ambient air Part 1.1 Guide to siting air monitoring equipment
- VGTLAB-QW14 – Determination of Dusts
- VGTLAB-QW11- Site Visits /Site specific Appendix (online Onenote)

4. Apparatus

4.1. *Deposit Gauge*

Comprising of a 150mm $\pm$ 10mm diameter funnel (nominal angle of cone sides 60 degrees) of glass, or other demonstrably unreactive material, supported in the neck of a glass bottle of minimum volume 2L, in such a way as to remain horizontal and to allow water overflow under excessive rainfall conditions. (An indicative design is given in Figure 1)

4.2. *Lid*

The gauge shall have a tight fitting lid for sealing the bottle during transport. The lid shall be made of an impermeable material, which does not react with the collected, deposited matter.

4.3. *Stand*

The stand shall support the deposit gauge such that the funnel face is between 1.8 and 2.2m above ground level. The stand generally incorporates a container or beaker to protect the bottle contents from sunlight, which can accelerate algal growth. This container or beaker is provided with a drainage hole at the base to prevent rainwater build-up. The stand should be sufficiently rugged to prevent any noticeable sway and shall ensure that the funnel aperture plane is maintained in horizontal position. A typical stand is illustrated in Figure 2.

4.4. *Bird Ring (optional)*

Shall be made of inert and corrosion resistant metal wire having a diameter of 4 mm to 6 mm and of suitable design to prevent birds perching on the funnel. See Figure 2.

Other bird deterrent methods (such as cable ties around the ring) can be employed as long as they do not interfere with sample collection zone.

4.5. *Copper Sulphate Solution*

Dissolve 7.8g of copper sulphate pentahydrate ($\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$) in 1 litre tap water. This acts as an algacide. There is no requirement to accurately measure this as Total Solids is not included in this scope.

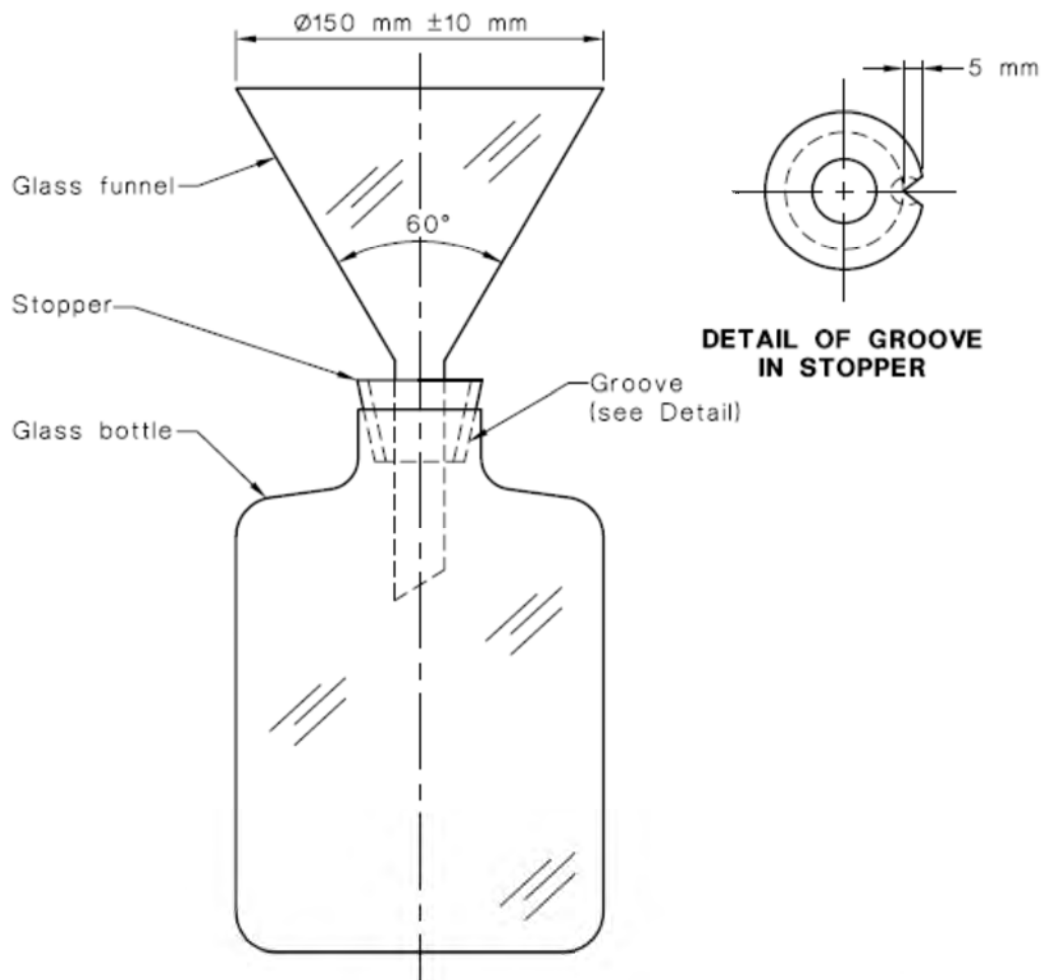


FIGURE 1 TYPICAL STANDARD DEPOSIT GAUGE

(Source: AS3580.10.1)

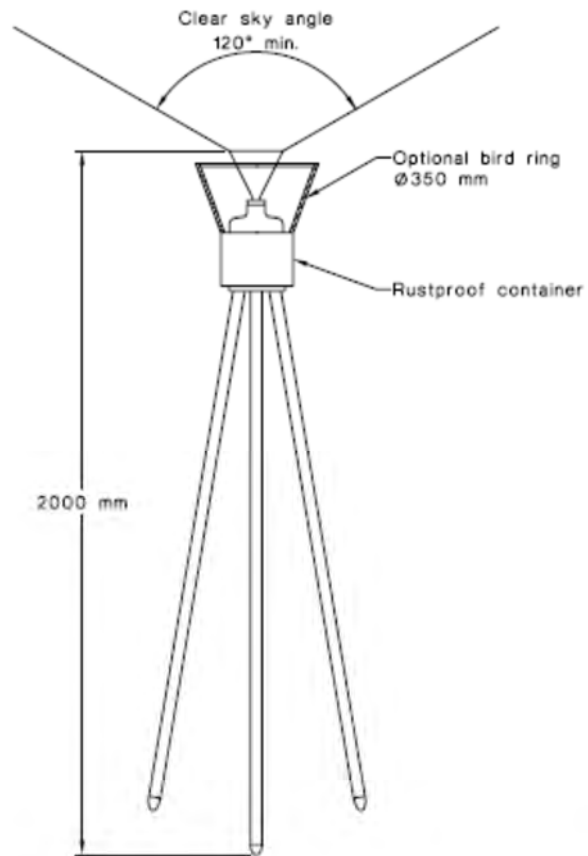


FIGURE 2 TYPICAL STAND WITH DEPOSIT GAUGE

(Source: AS3580.10.1)

5. Safety

VGT staff must at all times follow the safety directions of site managers and site safety protocols. This includes consultation with the client prior to entering the premises. Laboratory safety begins with a safe attitude. The following must be considered before proceeding.

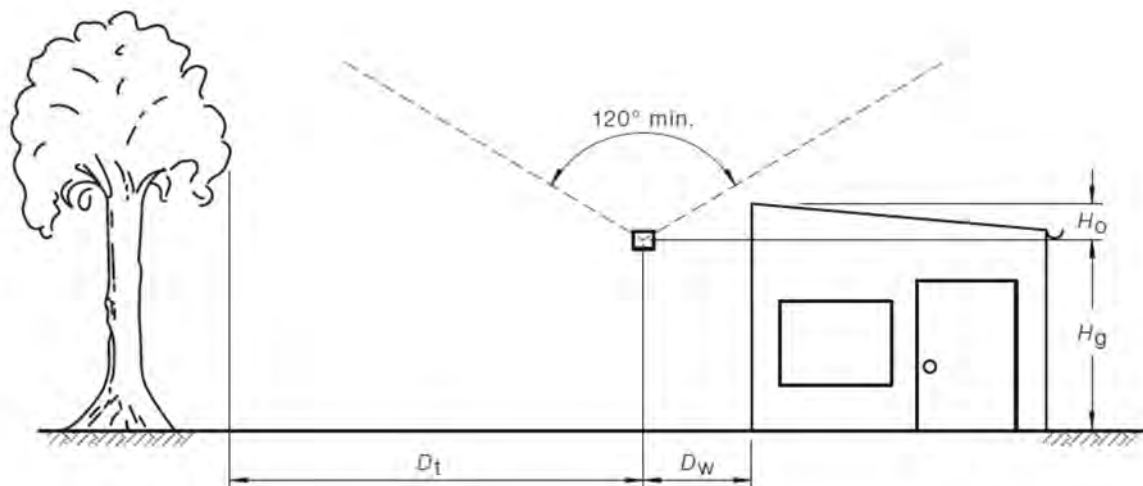
- Become familiar with the physical properties and potential dangers of materials you plan to use. Consider how they may react in combination
- Consider the limitations of the equipment you plan to use.
- Think through any potential hazards associated with your work and plan your response *before* commencing an experiment.
- If in doubt ask your supervisor for assistance.
- Wear the appropriate protective clothing when working in the field.
- Wear appropriate footwear and personal protection.
- If you are working alone, always let someone know your whereabouts and schedule.
- All chemicals should be disposed of as stated in the MSDS.
- Treat each sample as if it is potentially hazardous.
- Inspect any glass or equipment for breakage or sharp edges prior to handling. Do not pick up bottles by the lids, particularly Winchesters of 2L capacity or more. Place a hand under the base of the bottles whilst lifting
- Dispose of broken glassware into the appropriate container, ensuring any contamination hazard is considered.
- Care should be taken when cleaning or drying glassware.
- If glass tubing or rod is to be passed through a bung, lubricate the glass before insertion. The bung should never be held in the palm of the hand while inserting the tube. If any significant force is required to push the tube through the bung, the hole should be enlarged.

6. Procedure

6.1. Location and Positioning

The sampling site should be selected in accordance with the guidelines given in AS3580.1.1 Methods for sampling and analysis of ambient air Part 1.1 Guide to siting air monitoring equipment. In particular, the following points should be considered:

- The site shall be level ground, free, as far as practicable, from such foreign (to the case in hand) sources of pollution such as chimneys, traffic, incinerators, trees, dusty ground and road traffic. If a local foreign source exists in the area, it shall be noted and mapped.
- The nearest obstacles shall not be closer than twice their height. Therefore if the obstacle is 3m high, the gauge must be no closer than 6m.
- As a general rule, a sampling inlet should be located away from any nearby structure to the extent that the sampling inlet has a minimum clear sky angle of 120°.
- There should be an unrestricted air flow of 360° around the sampling inlet.
- The sample inlet shall be horizontal and between 1.8 and 2.2m above ground level.
- The gauge must greater than 5m from source road and 10m from any object taller than the gauge inlet and 10m from the dripline of any trees.



(Source: AS3580.1.1)

H_g = Height of top of funnel above ground = $2 \pm 0.2\text{m}$

H_o = Height of nearby obstacle above sampling inlet – $2H_o \leq D_w$

D_t = Distance to nearby tree $\geq 10\text{m}$ from drip-line

D_w = Distance to wall or supporting structure $\geq$ minimum 1m

120° = Minimum clear sky angle above sampling inlet

6.2. Recommended Minimum Distances between Stations and Roads

For sites significantly influenced by motor vehicle emissions, the following criteria require a statement in the monitoring data if not met. (Distances are for particle measurement)

Estimated No of Vehicles per day	Min Distance between site and road (m)
<10,000	50
20,000	75
40,000	100

6.3. Period of Exposure

In general the period of exposure shall be 30 ± 2 days.

6.4. Gauge Preparation

During preliminary cleaning, washing agents which do not attack the inside surface of the deposit gauge and lid may be used to clean the deposit gauge bottle. After each preliminary cleaning, the deposit gauge bottle shall be rinsed with water in order to remove any remaining extraneous matter. To prevent algal growth in the deposit gauge, 10mL of copper sulphate solution (4.5) shall be measured into the deposit gauge bottle and the bottle tightly sealed. The gauge and prepared assembly should be packed for transport to the sampling site. Before exposure, all extraneous matter adhering to the deposit gauge and lid shall be removed.

6.5. Gauge Exchange

Where a gauge has overflowed, or where the sampling site doesn't comply with AS3580.1.1, or any other details that may affect the results, this should be noted on the sampling report, and the client made aware that the results may be invalid. The volume of liquid in the gauge should be recorded as it gives an indication of the rainfall for the exposure period. The gauge exchange procedure shall be as follows:

- At the end of the exposure period, wash any deposited matter adhering to the funnel into the deposit gauge bottle using a minimum volume of distilled water from a wash bottle.
- Inspect the gauge from the base to ensure no spiders or other harmful insects are present in the gauge prior to placing hands within the apparatus. Observe whether any broken glass is present.
- Remove bottle carefully lifting from the base where possible. Use gloves to avoid cuts from any broken funnels or bottles if required.
- Remove the funnel and attached stopper and seal the bottle with a lid. If the bottle is broken, carefully and clearly label as broken to warn staff of the risk of cuts when handling. Identify the bottle with a label detailing the site location and period of exposure. Return the bottle to the laboratory for analysis.
- Insert the clean funnel with attached stopper into a fresh bottle containing algicide (10mL of copper sulphate solution) and leave exposed for the next sampling period.
- Ensure that the funnel is firmly held in the neck of the bottle and that the funnel aperture plane is horizontal.

NOTE: When on site to exchange dust gauges ensure that you have the appropriate safety equipment and follow all safety instructions given by the relevant company/landowner

operating the site. For further instructions see relevant safety procedures and Safe Work Method Statements.

6.6. Storage

Analysis of the deposited matter should be performed at the earliest opportunity and completed within 30 days of collection. During storage, deposit gauges shall be tightly sealed and kept cool to prevent the growth of algae, fungi and other micro-organisms.

6.7. Documentation

The sampling details are recorded on the dust sampling form. Any customer-requested deviations, additions or exclusions from the documented sampling procedure are recorded and communicated to the appropriate personnel. The following details are to be recorded for reporting:

- Location of gauge, including co-ordinate or map reference, height above ground, classification of area (eg industrial, residential, agricultural or urban).
- Any non-conformance to AS3580.1.1 or AS3580.10.1, such as proximity of objects, overflow of gauge, funnel size or angle not compliant.
- Date and time of sampling and name of technician
- Relevant data that may include weather conditions, proximity of bush fires, farming or earth-moving activities, traffic on unsealed roads

This is recorded on VGTLAB-QFM46 Dust Sampling Sheet each month. Static information is stored in LIMS/sample point fields along with the Site Specific Appendix.

Appendix G Pumping Records

Date	Start	Finish	Hours	Litres @ 120/min	Day	m3/day
1/01/2025			0	0	Wednesday	0
2/01/2025			0	0	Thursday	0
3/01/2025			0	0	Friday	0
4/01/2025			0	0	Saturday	0
5/01/2025			0	0	Sunday	0
6/01/2025			0	0	Monday	0
7/01/2025			0	0	Tuesday	0
8/01/2025			0	0	Wednesday	0
9/01/2025	8.00	12.00	4	28800	Thursday	28.8
10/01/2025	1.00	4.00	3	21600	Friday	21.6
11/01/2025	7.30	2.00	6.5	46800	Saturday	46.8
12/01/2025					Sunday	0
13/01/2025	8.00	12.00	4	28800	Monday	28.8
14/01/2025					Tuesday	0
15/01/2025	8.30	4.00	7.5	54000	Wednesday	54
16/01/2025	10.30	4.00	5.5	39600	Thursday	39.6
17/01/2025	10.30	4.00	5.5	39600	Friday	39.6
18/01/2025	9.00	4.00	7	50400	Saturday	50.4
19/01/2025					Sunday	0
20/01/2025					Monday	0
21/01/2025					Tuesday	0
22/01/2025	7.00	4.00	9	64800	Wednesday	64.8
23/01/2025	8.00	4.00	8	57600	Thursday	57.6
24/01/2025	8.00	4.00	8	57600	Friday	57.6
25/01/2025	12.00	4.00	4	28800	Saturday	28.8
26/01/2025					Sunday	0
27/01/2025				0	Monday	0
28/01/2025				0	Tuesday	0
29/01/2025	10.30	4.00	5.5	39600	Wednesday	39.6
30/01/2025	9.00	4.00	7	50400	Thursday	50.4
31/01/2025	8.00	2.00	6	43200	Friday	43.2
1/02/2025					Saturday	0
2/02/2025					Sunday	0
3/02/2025					Monday	0
4/02/2025					Tuesday	0
5/02/2025	7.00	3.30	8.5	61200	Wednesday	61.2
6/02/2025	7.00	3.00	8	57600	Thursday	57.6
7/02/2025	10.00	4.00	6	43200	Friday	43.2
8/02/2025					Saturday	0
9/02/2025					Sunday	0
10/02/2025					Monday	0
11/02/2025					Tuesday	0
12/02/2025	8.30	4.00	7.5	54000	Wednesday	54
13/02/2025	10.30	4.00	5.5	39600	Thursday	39.6
14/02/2025	10.30	4.00	5.5	39600	Friday	39.6
15/02/2025	9.00	4.00	7	50400	Saturday	50.4

16/02/2025				0	Sunday	0
17/02/2025					Monday	0
18/02/2025					Tuesday	0
19/02/2025	7.00	3.30	8.5	61200	Wednesday	61.2
20/02/2025	7.00	3.00	8	57600	Thursday	57.6
21/02/2025	10.00	4.00	6	43200	Friday	43.2
22/02/2025	1.00	4.00	3	21600	Saturday	21.6
23/02/2025				0	Sunday	0
24/02/2025	8.00	12.00	4	28800	Monday	28.8
25/02/2025					Tuesday	0
26/02/2025	8.30	4.00	7.5	54000	Wednesday	54
27/02/2025	9.00	4.00	7	50400	Thursday	50.4
28/02/2025				0	Friday	0
1/03/2025	10.45	3.30	4.25	30600	Saturday	30.6
2/03/2025				0	Sunday	0
3/03/2025	8.00	12.00	4	28800	Monday	28.8
4/03/2025				0	Tuesday	0
5/03/2025				0	Wednesday	0
6/03/2025	9.00	3.00	6	43200	Thursday	43.2
7/03/2025	9.30	3.30	6	43200	Friday	43.2
8/03/2025	9.30	3.30	6	43200	Saturday	43.2
9/03/2025				0	Sunday	0
10/03/2025				0	Monday	0
11/03/2025				0	Tuesday	0
12/03/2025	8.00	3.30	7.5	54000	Wednesday	54
13/03/2025	7.00	4.00	9	64800	Thursday	64.8
14/03/2025	8.00	3.30	7.5	54000	Friday	54
15/03/2025	8.00	4.00	8	57600	Saturday	57.6
16/03/2025				0	Sunday	0
17/03/2025	7.00	12.00	5	36000	Monday	36
18/03/2025				0	Tuesday	0
19/03/2025				0	Wednesday	0
20/03/2025				0	Thursday	0
21/03/2025	7.00	4.00	9	64800	Friday	64.8
22/03/2025	8.00	4.00	8	57600	Saturday	57.6
23/03/2025				0	Sunday	0
24/03/2025				0	Monday	0
25/03/2025				0	Tuesday	0
26/03/2025	9.00	5.00	8	57600	Wednesday	57.6
27/03/2025	9.00	5.00	8	57600	Thursday	57.6
28/03/2025	9.30	5.00	7.5	54000	Friday	54
29/03/2025	10.00	3.00	5	36000	Saturday	36
30/03/2025				0	Sunday	0
31/03/2025				0	Monday	0
1/04/2025				0	Tuesday	0
2/04/2025				0	Wednesday	0
3/04/2025	9.00	3.00	6	43200	Thursday	43.2

4/04/2025	8.00	3.00	7	50400	Friday	50.4
5/04/2025	7.00	2.00	7	50400	Saturday	50.4
6/04/2025				0	Sunday	0
7/04/2025	7.00	12.00	5	36000	Monday	36
8/04/2025				0	Tuesday	0
9/04/2025				0	Wednesday	0
10/04/2025				0	Thursday	0
11/04/2025				0	Friday	0
12/04/2025				0	Saturday	0
13/04/2025				0	Sunday	0
14/04/2025				0	Monday	0
15/04/2025				0	Tuesday	0
16/04/2025				0	Wednesday	0
17/04/2025				0	Thursday	0
18/04/2025				0	Friday	0
19/04/2025				0	Saturday	0
20/04/2025				0	Sunday	0
21/04/2025				0	Monday	0
22/04/2025				0	Tuesday	0
23/04/2025				0	Wednesday	0
24/04/2025				0	Thursday	0
25/04/2025				0	Friday	0
26/04/2025				0	Saturday	0
27/04/2025				0	Sunday	0
28/04/2025				0	Monday	0
29/04/2025				0	Tuesday	0
30/04/2025	8.00	3.30	7.5	54000	Wednesday	54
1/05/2025	7.00	4.00	9	64800	Thursday	64.8
2/05/2025	8.00	3.30	7.5	54000	Friday	54
3/05/2025	8.00	4.00	8	57600	Saturday	57.6
4/05/2025				0	Sunday	0
5/05/2025	7.00	8.00	1	7200	Monday	7.2
6/05/2025				0	Tuesday	0
7/05/2025				0	Wednesday	0
8/05/2025				0	Thursday	0
9/05/2025	7.00	4.00	9	64800	Friday	64.8
10/05/2025	8.00	4.00	8	57600	Saturday	57.6
11/05/2025				0	Sunday	0
12/05/2025				0	Monday	0
13/05/2025				0	Tuesday	0
14/05/2025	8.30	4.00	7.5	54000	Wednesday	54
15/05/2025	10.30	4.00	5.5	39600	Thursday	39.6
16/05/2025	10.30	4.00	5.5	39600	Friday	39.6
17/05/2025	9.00	4.00	7	50400	Saturday	50.4
18/05/2025				0	Sunday	0
19/05/2025				0	Monday	0
20/05/2025				0	Tuesday	0

21/05/2025				0	Wednesday	0
22/05/2025	10.45	3.30	4.25	30600	Thursday	30.6
23/05/2025	9.00	4.00	7	50400	Friday	50.4
24/05/2025	8.00	12.00	4	28800	Saturday	28.8
25/05/2025				0	Sunday	0
26/05/2025				0	Monday	0
27/05/2025				0	Tuesday	0
28/05/2025				0	Wednesday	0
29/05/2025	8.00	4.00	8	57600	Thursday	57.6
30/05/2025	7.00	4.00	9	64800	Friday	64.8
31/05/2025	8.00	3.30	7.5	54000	Saturday	54
1/06/2025				0	Sunday	0
2/06/2025				0	Monday	0
3/06/2025				0	Tuesday	0
4/06/2025	8.00	4.00	8	57600	Wednesday	57.6
5/06/2025	9.00	4.00	7	50400	Thursday	50.4
6/06/2025	9.30	3.30	6	43200	Friday	43.2
7/06/2025				0	Saturday	0
8/06/2025				0	Sunday	0
9/06/2025				0	Monday	0
10/06/2025				0	Tuesday	0
11/06/2025				0	Wednesday	0
12/06/2025				0	Thursday	0
13/06/2025				0	Friday	0
14/06/2025	8.00	4.00	8	57600	Saturday	57.6
15/06/2025				0	Sunday	0
16/06/2025				0	Monday	0
17/06/2025				0	Tuesday	0
18/06/2025	7.00	4.00	9	64800	Wednesday	64.8
19/06/2025	8.00	4.00	8	57600	Thursday	57.6
20/06/2025	8.00	12.00	4	28800	Friday	28.8
21/06/2025				0	Saturday	0
22/06/2025				0	Sunday	0
23/06/2025				0	Monday	0
24/06/2025				0	Tuesday	0
25/06/2025	7.00	3.30	8.5	61200	Wednesday	61.2
26/06/2025	2.00	4.00	2	14400	Thursday	14.4
27/06/2025	1.00	4.00	3	21600	Friday	21.6
28/06/2025	7.30	12.00	4.5	32400	Saturday	32.4
29/06/2025				0	Sunday	0
30/06/2025				0	Monday	0
1/07/2025				0	Tuesday	0
2/07/2025	8.00	4.00	8	57600	Wednesday	57.6
3/07/2025	9.00	4.00	7	50400	Thursday	50.4
4/07/2025	9.30	3.30	6	43200	Friday	43.2
5/07/2025				0	Saturday	0
6/07/2025				0	Sunday	0

7/07/2025				0	Monday	0
8/07/2025				0	Tuesday	0
9/07/2025	7.00	3.30	8.5	61200	Wednesday	61.2
10/07/2025	2.00	4.00	2	14400	Thursday	14.4
11/07/2025	12.00	4.00	4	28800	Friday	28.8
12/07/2025				0	Saturday	0
13/07/2025				0	Sunday	0
14/07/2025				0	Monday	0
15/07/2025				0	Tuesday	0
16/07/2025				0	Wednesday	0
17/07/2025				0	Thursday	0
18/07/2025	8.00	4.00	8	57600	Friday	57.6
19/07/2025	9.00	4.00	7	50400	Saturday	50.4
20/07/2025				0	Sunday	0
21/07/2025	8.30	12.00	3.5	25200	Monday	25.2
22/07/2025				0	Tuesday	0
23/07/2025				0	Wednesday	0
24/07/2025				0	Thursday	0
25/07/2025				0	Friday	0
26/07/2025				0	Saturday	0
27/07/2025				0	Sunday	0
28/07/2025	7.30	12.00	4.5	32400	Monday	32.4
29/07/2025				0	Tuesday	0
30/07/2025				0	Wednesday	0
31/07/2025	7.00	3.30	8.5	61200	Thursday	61.2
1/08/2025	2.00	4.00	2	14400	Friday	14.4
2/08/2025	1.00	4.00	3	21600	Saturday	21.6
3/08/2025				0	Sunday	0
4/08/2025	7.30	12.00	4.5	32400	Monday	32.4
5/08/2025				0	Tuesday	0
6/08/2025	8.00	4.00	8	57600	Wednesday	57.6
7/08/2025	9.00	4.00	7	50400	Thursday	50.4
8/08/2025	9.30	3.30	6	43200	Friday	43.2
9/08/2025	8.30	12.00	3.5	25200	Saturday	25.2
10/08/2025				0	Sunday	0
11/08/2025				0	Monday	0
12/08/2025				0	Tuesday	0
13/08/2025	7.00	3.30	8.5	61200	Wednesday	61.2
14/08/2025	2.00	4.00	2	14400	Thursday	14.4
15/08/2025				0	Friday	0
16/08/2025	7.30	12.00	4.5	32400	Saturday	32.4
17/08/2025				0	Sunday	0
18/08/2025				0	Monday	0
19/08/2025				0	Tuesday	0
20/08/2025				0	Wednesday	0
21/08/2025	8.50	4.00	7.5	54000	Thursday	54
22/08/2025	9.00	4.00	7	50400	Friday	50.4

23/08/2025	9.30	3.30	6	43200	Saturday	43.2
24/08/2025				0	Sunday	0
25/08/2025				0	Monday	0
26/08/2025				0	Tuesday	0
27/08/2025				0	Wednesday	0
28/08/2025	10.00	4.00	6	43200	Thursday	43.2
29/08/2025	9.00	4.00	7	50400	Friday	50.4
30/08/2025	7.30	3.30	8	57600	Saturday	57.6
31/08/2025				0	Sunday	0
1/09/2025				0	Monday	0
2/09/2025				0	Tuesday	0
3/09/2025	7.00	3.30	8.5	61200	Wednesday	61.2
4/09/2025	2.00	4.00	2	14400	Thursday	14.4
5/09/2025	1.00	4.00	3	21600	Friday	21.6
6/09/2025	7.30	12.00	4.5	32400	Saturday	32.4
7/09/2025				0	Sunday	0
8/09/2025	8.00	11.00	3	21600	Monday	21.6
9/09/2025				0	Tuesday	0
10/09/2025				0	Wednesday	0
11/09/2025				0	Thursday	0
12/09/2025	8.00	4.00	8	57600	Friday	57.6
13/09/2025	9.00	4.00	7	50400	Saturday	50.4
14/09/2025				0	Sunday	0
15/09/2025	8.30	12.00	3.5	25200	Monday	25.2
16/09/2025				0	Tuesday	0
17/09/2025				0	Wednesday	0
18/09/2025				0	Thursday	0
19/09/2025	10.00	4.00	6	43200	Friday	43.2
20/09/2025	9.00	4.00	7	50400	Saturday	50.4
21/09/2025				0	Sunday	0
22/09/2025	8.00	12.00	4	28800	Monday	28.8
23/09/2025				0	Tuesday	0
24/09/2025				0	Wednesday	0
25/09/2025	9.00	5.00	8	57600	Thursday	57.6
26/09/2025	9.00	5.00	8	57600	Friday	57.6
27/09/2025	9.30	5.00	7.5	54000	Saturday	54
28/09/2025				0	Sunday	0
29/09/2025				0	Monday	0
30/09/2025				0	Tuesday	0
1/10/2025	7.00	3.30	8.5	61200	Wednesday	61.2
2/10/2025	2.00	4.00	2	14400	Thursday	14.4
3/10/2025	1.00	4.00	3	21600	Friday	21.6
4/10/2025	7.30	12.00	4.5	32400	Saturday	32.4
5/10/2025				0	Sunday	0
6/10/2025				0	Monday	0
7/10/2025				0	Tuesday	0
8/10/2025				0	Wednesday	0

9/10/2025	8.30	4.00	7.5	54000	Thursday	54
10/10/2025	10.30	4.00	5.5	39600	Friday	39.6
11/10/2025	10.30	4.00	5.5	39600	Saturday	39.6
12/10/2025				0	Sunday	0
13/10/2025			0	0	Monday	0
14/10/2025	10.00	4.00	6	43200	Tuesday	43.2
15/10/2025	9.00	4.00	7	50400	Wednesday	50.4
16/10/2025	7.30	3.30	8	57600	Thursday	57.6
17/10/2025	8.00	12.00	4	28800	Friday	28.8
18/10/2025			0	0	Saturday	0
19/10/2025			0	0	Sunday	0
20/10/2025	12.00	4.00	4	28800	Monday	28.8
21/10/2025			0	0	Tuesday	0
22/10/2025	10.00	4.00	6	43200	Wednesday	43.2
23/10/2025	9.00	3.00	6	43200	Thursday	43.2
24/10/2025			0	0	Friday	0
25/10/2025	9.00	12.00	3	21600	Saturday	21.6
26/10/2025			0	0	Sunday	0
27/10/2025	9.00	4.00	7	50400	Monday	50.4
28/10/2025	10.00	4.00	6	43200	Tuesday	43.2
29/10/2025	9.00	4.00	7	50400	Wednesday	50.4
30/10/2025	7.30	3.30	8	57600	Thursday	57.6
31/10/2025	8.00	12.00	4	28800	Friday	28.8
1/11/2025	8.00	12.00	4	28800	Saturday	28.8
2/11/2025			0	0	Sunday	0
3/11/2025			0	0	Monday	0
4/11/2025	8.00	4.00	8	57600	Tuesday	57.6
5/11/2025	9.00	3.00	6	43200	Wednesday	43.2
6/11/2025			0	0	Thursday	0
7/11/2025			0	0	Friday	0
8/11/2025			0	0	Saturday	0
9/11/2025			0	0	Sunday	0
10/11/2025	10.00	4.00	6	43200	Monday	43.2
11/11/2025	8.00	1.00	5	36000	Tuesday	36
12/11/2025			0	0	Wednesday	0
13/11/2025			0	0	Thursday	0
14/11/2025			0	0	Friday	0
15/11/2025			0	0	Saturday	0
16/11/2025			0	0	Sunday	0
17/11/2025			0	0	Monday	0
18/11/2025	8.30	3.30	7	50400	Tuesday	50.4
19/11/2025	9.00	3.30	6.5	46800	Wednesday	46.8
20/11/2025			0	0	Thursday	0
21/11/2025			0	0	Friday	0
22/11/2025			0	0	Saturday	0
23/11/2025			0	0	Sunday	0
24/11/2025	7.00	3.00	8	57600	Monday	57.6

25/11/2025			0	0	Tuesday	0
26/11/2025			0	0	Wednesday	0
27/11/2025			0	0	Thursday	0
28/11/2025			0	0	Friday	0
29/11/2025			0	0	Saturday	0
30/11/2025			0	0	Sunday	0
1/12/2025	8.00	4.00	8	57600	Monday	57.6
2/12/2025	9.00	4.00	7	50400	Tuesday	50.4
3/12/2025	9.30	3.30	6	43200	Wednesday	43.2
4/12/2025			0	0	Thursday	0
5/12/2025			0	0	Friday	0
6/12/2025			0	0	Saturday	0
7/12/2025			0	0	Sunday	0
8/12/2025			0	0	Monday	0
9/12/2025	8.50	4.00	7.5	54000	Tuesday	54
10/12/2025	9.00	4.00	7	50400	Wednesday	50.4
11/12/2025	9.30	3.30	6	43200	Thursday	43.2
12/12/2025	9.00	12.00	3	21600	Friday	21.6
13/12/2025			0	0	Saturday	0
14/12/2025			0	0	Sunday	0
15/12/2025			0	0	Monday	0
16/12/2025			0	0	Tuesday	0
17/12/2025			0	0	Wednesday	0
18/12/2025			0	0	Thursday	0
19/12/2025			0	0	Friday	0
20/12/2025			0	0	Saturday	0
21/12/2025			0	0	Sunday	0
22/12/2025			0	0	Monday	0
23/12/2025			0	0	Tuesday	0
24/12/2025			0	0	Wednesday	0
25/12/2025			0	0	Thursday	0
26/12/2025			0	0	Friday	0
27/12/2025			0	0	Saturday	0
28/12/2025			0	0	Sunday	0
29/12/2025			0	0	Monday	0
30/12/2025			0	0	Tuesday	0
31/12/2025			0	0	Wednesday	0
				6800400		

Appendix H

Noise Monitoring Results

Annual Noise Monitoring Assessment

Roberts Road Sand Quarry

Roberts Road

Maroota, NSW

November 2025

Prepared For: Hodgson Quarry and Plant

C/- VGT Environmental Compliance Solutions Pty Ltd

December 2025

MAC160257-05RP1

Document Information

Annual Noise Monitoring Assessment

Roberts Road Sand Quarry

Roberts Road

Maroota, NSW

November 2025

Prepared for: Hodgson Quarry and Plant

C/- VGT Environmental Compliance Solutions Pty Ltd

Prepared by: Muller Acoustic Consulting Pty Ltd

PO Box 678, Kotara NSW 2289

ABN: 36 602 225 132

P: +61 2 4920 1833

www.mulleracoustic.com

PROJECT MANAGER	PREPARED BY	REVIEWED BY	DATE	REPORT NO
Robin Heaton	Daniel Brown	Oliver Muller	8 December 2025	MAC160257-05RP1
				

DISCLAIMER

All documents produced by Muller Acoustic Consulting Pty Ltd (MAC) are prepared for a particular client's requirements and are based on a specific scope, circumstances and limitations derived between MAC and the client. Information and/or report(s) prepared by MAC may not be suitable for uses other than the original intended objective. No parties other than the client should use or reproduce any information and/or report(s) without obtaining permission from MAC. Any information and/or documents prepared by MAC is not to be reproduced, presented or reviewed except in full.

CONTENTS

1	INTRODUCTION	5
2	NOISE CRITERIA	7
2.1	OPERATIONAL NOISE CRITERIA	7
2.2	TRAFFIC NOISE CRITERIA.....	9
3	METHODOLOGY	11
3.1	LOCALITY	11
3.2	ASSESSMENT METHODOLOGY	11
4	RESULTS.....	13
4.1	METEOROLOGICAL CONDITIONS.....	13
4.2	ASSESSMENT RESULTS – LOCATION EPA 1	14
4.3	ASSESSMENT RESULTS – LOCATION EPA 2	15
4.4	ASSESSMENT RESULTS – LOCATION EPA 3	16
4.5	ASSESSMENT RESULTS – LOCATION EPA 4	17
4.6	ASSESSMENT RESULTS – LOCATION EPA 5	18
4.7	ASSESSMENT RESULTS – LOCATION EPA 6	19
4.8	ASSESSMENT RESULTS – LOCATION EPA 7	20
4.9	UNATTENDED ROAD TRAFFIC NOISE RESULTS – LOCATION R1	21
5	DISCUSSION	23
5.1	DISCUSSION OF RESULTS – LOCATION EPA 1	23
5.2	DISCUSSION OF RESULTS – LOCATION EPA 2.....	23
5.3	DISCUSSION OF RESULTS – LOCATION EPA 3.....	23
5.4	DISCUSSION OF RESULTS – LOCATION EPA 4.....	24
5.5	DISCUSSION OF RESULTS – LOCATION EPA 5.....	24
5.6	DISCUSSION OF RESULTS – LOCATION EPA 6.....	24
5.7	DISCUSSION OF RESULTS – LOCATION EPA 7.....	25
6	CONCLUSION	27

APPENDIX A – GLOSSARY OF TERMS

This page has been intentionally left blank

1 Introduction

Muller Acoustic Consulting Pty Ltd (MAC) has been commissioned by VGT Environmental Compliance Solutions Pty Ltd (VGT), on behalf of Hodgson Quarry and Plant to complete a Noise Monitoring Assessment (NMA) for the Roberts Road Sand Quarry (the quarry), Maroota, NSW.

The NMA involved quantifying the noise contribution of the quarry by conducting operator attended measurements to determine compliance with the Environmental Protection Licence (EPL #6535) noise limits. The monitoring has been conducted in general accordance with Conditions P1.2 and L3 of the EPL and Conditions 16, 48, 49 and 50 of the Consolidated Consent (Mod 4, DA 267-11-99) at seven receiver locations.

The assessment has been conducted in accordance with the following documents:

- NSW Environment Protection Authority (EPA), Noise Policy for Industry (NPI), 2017;
- NSW Environment Protection Authority (EPA), Approved Methods for the measurement and analysis of environmental noise in NSW, 2022;
- NSW Environment Protection Authority (EPA), Environment Protection Licence (EPL) #6535;
- NSW Department of Planning, Industry and Environment (DPIE), Consolidated Consent DA #267-11-99, Modification 4;
- Standards Australia AS/NZS IEC 61672.1-2019-Electroacoustics - Sound level meters – Specifications; and
- Standards Australia AS 1055:2018 - Acoustics - Description and measurement of environmental noise - General Procedures.

A glossary of terms, definitions and abbreviations used in this report is provided in **Appendix A**.

This page has been intentionally left blank

2 Noise Criteria

2.1 Operational Noise Criteria

Table 1 incorporates the noise limits for assessed receivers referenced from Conditions P1.2 and L3.1 of the EPL and Condition 49 of the Consolidated Consent, that have been adopted for this NMA and are consistent with EPL monitoring locations.

Table 1 Noise Limits, dBA			
Receiver Identification	Day ²	Morning Shoulder ³	
	LAeq(15min)	LAeq(15min)	LA1(1min)
Point 1,3,4,5,6,7 (EPA 1,3,4,5,6,7) ¹ or All other receivers ²	43	40	50
Point 2 (EPA 2) ¹ or Receiver B ²	44	40	50

Note 1: Noise criteria adopted from EPL #6535.

Note 2: Day - the period from 7am to 6pm Monday to Saturday and the period from 8am to 6pm Sunday and public holidays, EPL #6535.

Note 3: Noise criteria adopted from Consolidated Consent #DA 267-11-99, Modification 4.

The subsequent conditions stated in Section L3 and P1.2 of the projects EPL (EPL #6535) and are reproduced below:

Condition L3.3

- The noise limits set out in condition L3.1 apply under all meteorological conditions shown in the table below; and*
- For those meteorology conditions not referred to in Condition L3.3(a), the noise limits that apply are the noise limits in Condition L3.1 plus 5dB.*

Assessment Period	Meteorology Conditions
Day	Stability Categories A, B, C, D and E with wind speeds up to and including 3m/s at 10m above ground level.

L3.4 For the purpose of condition L3.3:

- The meteorological conditions are to be determined from meteorological data obtained from a meteorological weather station.*
- Stability category shall be determined using the following method from fact Sheet D of the Noise Policy for Industry (NSW EPA, 2017):*
 - Pasquill-Gifford stability classification scheme (section D1.3.1).*

L3.5 To assess compliance:

a) with LAeq (15 minute) noise limits in condition L3.1, the noise measurement equipment must be located:

- i. approximately on the property boundary, where any dwelling is situated 30 metres or less from the property boundary closest to the premises; or where applicable,*
- ii. within 30 meters of a dwelling façade, but not closer than 3m, where any dwelling on the property is situated more than 30 meters from the property boundary closest to the premises; or, where applicable,*
- iii. in an area within 50 meters of the boundary of a National Park or a Nature Reserve,*
- iv. at any other location identified in condition L3.1.*

b) with LAeq (15 minute) noise limits in condition L3.1, the noise measurement equipment must be located:

- i. at the reasonably most affected point at a location where there is no residence at the location; or,*
- ii. at the reasonably most affected point within an area at a location prescribed by condition L3.5(a).*

L3.6 A non-compliance of conditions L3.1 will still occur where noise generated from the premises is measured in excess of the noise limit at a point other than the reasonably most affected point at the locations referred to in condition L3.5(a) or L3.5(b).

Notes to L3.5 and L3.6: *The reasonably most affected point is a point at a location or within an area at a location experiencing or expected to experience the highest sound pressure level from the premises.*

L3.7 For the purpose of determining the noise generated at the premises, the modifying factor correction in Table C1 in Fact Sheet C of the Noise Policy for Industry (NSW EPA, 2017) may be applied, if appropriate, to the noise measurements by the noise monitoring equipment.

L3.8 Noise measurement must not be undertaken where rain or wind speed at microphone level will affect the acquisition of valid measurements.

P1.2 The following points referred to in the table below are identified in this licence for the purposes of weather and/or noise monitoring and/or setting limits for the emission of noise from the premises.

<i>EPA identification no.</i>	<i>Type of monitoring point</i>	<i>Location description</i>
1	Noise monitoring	100 Old Telegraph Road, Maroota
2	Noise monitoring	35 Roberts Road, Maroota
3	Noise monitoring	4471 Northern Road, Maroota
4	Noise monitoring	11 Roberts Road, Maroota
5	Noise monitoring	4460 Old Northern Road, Maroota
6	Noise monitoring	59 Roberts Road, Maroota
7	Noise monitoring	45 Roberts Road, Maroota

Due to technical difficulties, data from the on-site meteorological station was unavailable. Therefore, data from the nearest Bureau of Meteorological (BoM) Station has been supplemented.

2.2 Traffic Noise Criteria

The subsequent conditions stated in Section 50 of the projects Consolidated Consent (DA# 267-11-99, Modification 4) and are reproduced below:

50. The Applicant shall ensure that all traffic noise from the development does not exceed (LAeq (1hr)) 55dB(A) between 7am and 10pm and 50dB(A) between 10pm and 7am at any affected residence under adverse weather conditions. Where ambient Leq levels already exceed these criteria, the Applicant shall ensure that traffic noise from the development does not result in an exceedance of more than 2dB(A).

Note: Adverse weather conditions means in the presence of winds up to 3 meters per second and/or temperature inversions of up to 4 degrees Centigrade per 100 meters.

This page has been intentionally left blank

3 Methodology

3.1 Locality

Roberts Road Sand Quarry is located at the Corner of Roberts Road and Old Northern Road, Maroota, NSW. Receivers in the locality surrounding the quarry are primarily rural/residential and for consistency the naming conventions for each receiver have been retained from Condition P1.2 of the EPL. The monitoring locations with respect to the quarry are presented in the locality plan shown in **Figure 1**.

3.2 Assessment Methodology

The attended noise survey was conducted by MAC staff in general accordance with the procedures described in Standards Australia AS 1055:2018, "Acoustics - Description and Measurement of Environmental Noise" and the EPL. Measurements were carried out using Svantek Type 1, 971 noise analysers between Wednesday 19 November 2025 and Thursday 20 November 2025. The acoustic instrumentation used carries appropriate and current NATA (or manufacturer) calibration certificates with records of all calibrations maintained by MAC as per Approved Methods for the measurement and analysis of environmental noise in NSW (EPA, 2022) and complies with AS/NZS IEC 61672.1-2019- Electroacoustics - Sound level meters - Specifications. Calibration of all instrumentation was checked prior to and following measurements. Drift in calibration did not exceed $\pm 0.5\text{dBA}$.

Due to time constraints within the morning shoulder period, two Svantek Type 1, 971 noise analysers were installed simultaneously at EPL1 and EPL6 on Thursday 20 November 2025. It is noted that there is approximately 40 meters between the two locations, therefore an intermediate observation point was chosen and is considered representative of both EPL monitoring locations. The noise analysers have audio playback capabilities to confirm noise sources during the observation period.

Day and morning shoulder measurements were of 15-minutes duration. Where possible, throughout each survey the operator quantified the contribution of each significant noise source. Extraneous noise sources were excluded from the analysis to calculate the $\text{LA}_{\text{eq}}(15\text{min})$ quarry noise contribution for comparison against the relevant EPL limit.

Prevailing meteorological conditions for the monitoring period were sourced from the Bureau of Meteorology (BoM) site located at Mangrove Mountain AWS, NSW Site #61375. Results obtained during non-prevailing meteorological conditions (ie F Class Stability in conjunction with a 2m/s drainage or G Class Stability) are considered not applicable against the EPL criteria.

Where the quarry is inaudible, the contribution is estimated to be at least 10dBA below the ambient noise level.



FIGURE 1
Site Locality
MAC160257

KEY

- Attended Monitoring Locations
- Road Noise Monitoring Location
- Site Boundary



4 Results

The monitoring and assessment results are presented in individual tables for each assessment location.

4.1 Meteorological Conditions

Weather data for the noise assessment was sourced from the BoM station, Mangrove Mountain, NSW, as well as operator measured conditions on site of EPL nominated receiver locations. The data was used to determine prevailing meteorological conditions at the time of the attended measurements, which are presented in **Table 2**.

Table 2 Prevailing Meteorological Conditions

Date & Time	Mangrove Mountain AWS, NSW		Operator Measured Weather	
	Bureau of Meteorological Station		Monitoring Location	
	Site #61375		(1.8m AGL)	
	Wind Direction	Wind (m/s)	Wind Direction	Wind (m/s)
19/10/2025 06:00	N	0.0	E	0.1
19/10/2025 06:23	WSW	1.1	E	0.1
19/10/2025 06:41	WNW	0.5	E	0.1
19/10/2025 07:19	W	1.6	N	0.3
19/10/2025 07:37	W	1.9	N	0.3
19/10/2025 09:47	NNW	1.6	SE	0.3
19/10/2025 10:11	N	1.1	SE	0.5
19/10/2025 10:32	WNW	1.6	SE	0.3
19/10/2025 10:50	SE	2.4	SE	0.4
19/10/2025 11:09	SSW	0.5	SE	0.4
20/10/2025 06:00	SSW	0.5	NW	0.1
20/10/2025 06:01	SSW	0.5	NW	0.1
20/10/2025 06:22	SW	1.6	NW	0.1
20/10/2025 06:39	S	1.9	NW	0.1

4.2 Assessment Results – Location EPA 1

The results of the attended noise measurements at location EPA 1 for the [Comments] survey are summarised in **Table 3** with the relevant EPL limits, the calculated quarry noise contribution and prevailing meteorological conditions at the time of each measurement.

Table 3 Operator-Attended Noise Survey Results – EPA 1														
Date	Time (hrs) ¹	Descriptor (dBA re 20 µPa)			Limit	Meteorology ²	Description and SPL, dBA							
		L _{Amax}	L _{Aeq}	L _{A90}										
19/11/2025	10:11 (Day)	68	43	36	43	WD: SE WS: 0.5m/s Rain: Nil	Birds 37-49							
							Traffic 35-68							
							Insects 33-50							
							Local residential noise 36-41							
							Windchimes 40-43							
							Aircraft 36-42							
							Quarry Processing <36 (just audible on lulls)							
							Quarry L _{Aeq} (15min) Contribution						<36	
							20/11/2025	06:00 (Morning Shoulder)	74	48	38	40/50	WD: NW WS: 0.1m/s Rain: Nil	Birds 35-53
														Traffic 36-74
Quarry mobile plant 36-42 (3 minutes)														
Quarry truck exit 37-43 (15 seconds)														
Quarry L _{Aeq} (15min) Contribution						37								
Quarry L _{A1} (1min) Contribution						43								

Note 1: Day - the period from 7am to 6pm Monday to Saturday and the period from 8am to 6pm Sunday and public holidays, EPL #6535.

Note 2: Meteorological data obtained from direct measurement by the operator and by BoM Mangrove Mountain AWS, NSW Site #61375.

4.3 Assessment Results – Location EPA 2

The results of the attended noise measurements at location EPA 2 for the [Comments] survey are summarised in **Table 4** with the relevant EPL limits, the calculated quarry noise contribution and prevailing meteorological conditions at the time of each measurement.

Table 4 Operator-Attended Noise Survey Results – EPA 2													
Date	Time (hrs) ¹	Descriptor (dBA re 20 µPa)			Limit	Meteorology ²	Description and SPL, dBA						
		L _A max	L _A eq	L _A 90									
19/11/2025	11:09 (Day)	80	58	46	44	WD: SE WS: 0.4m/s Rain: Nil	Birds 44-53						
							Traffic 43-80						
							Insects 43-48						
							Earthworks / other industrial						
							42-68						
							Windblown vegetation <42						
							Quarry processing 41-43 (audible on earthwork lulls)						
							Quarry trucks entry/ exit 42-48 (1 minute)						
							Quarry mobile plant 43-45 (audible on lulls)						
							Quarry L _A eq(15min) Contribution						42
20/11/2025	06:39 (Morning Shoulder)	81	51	33	40/50	WD: NW WS: 0.1m/s Rain: Nil	Birds 30-59						
							Traffic 30-81						
							Windblown vegetation <33						
							Local residential noise 30-41						
							Quarry mobile plant 36-40 (1 minute)						
							Quarry mechanical plant 33-35 (4 minutes)						
							Quarry L _A eq(15min) Contribution						36
							Quarry L _A 1(1min) Contribution						40

Note 1: Day - the period from 7am to 6pm Monday to Saturday and the period from 8am to 6pm Sunday and public holidays, EPL #6535.

Note 2: Meteorological data obtained from direct measurement by the operator and by BoM Mangrove Mountain AWS, NSW Site #61375.

4.4 Assessment Results – Location EPA 3

The results of the attended noise measurements at location EPA 3 for the [Comments] survey are summarised in **Table 5** with the relevant EPL limits, the calculated quarry noise contribution and prevailing meteorological conditions at the time of each measurement.

Table 5 Operator-Attended Noise Survey Results – EPA 3							
Date	Time (hrs) ¹	Descriptor (dBA re 20 µPa)			Limit	Meteorology ²	Description and SPL, dBA
		L _A max	L _A eq	L _A 90			
19/11/2025	07:19 (Day)	85	66	46	43	WD: N WS: 0.3m/s Rain: Nil	Traffic 38-85
							Birds 37-62
							Rooster 43-58
							Other industrial noise <43
							Quarry inaudible
Quarry L _A eq(15min) Contribution							<35
19/11/2025	06:00 (Morning Shoulder)	96	71	48	40/50	WD: E WS: 0.1m/s Rain: Nil	Traffic 42-96
							Birds 44-56
							Rooster 45-63
							Other industrial noise 40-43
							Quarry inaudible
Quarry L _A eq(15min) Contribution							<33
Quarry L _A 1(1min) Contribution							<33

Note 1: Day - the period from 7am to 6pm Monday to Saturday and the period from 8am to 6pm Sunday and public holidays, EPL #6535.

Note 2: Meteorological data obtained from direct measurement by the operator and by BoM Mangrove Mountain AWS, NSW Site #61375.

4.5 Assessment Results – Location EPA 4

The results of the attended noise measurements at location EPA 4 for the [Comments] survey are summarised in **Table 6** with the relevant EPL limits, the calculated quarry noise contribution and prevailing meteorological conditions at the time of each measurement.

Table 6 Operator-Attended Noise Survey Results – EPA 4							
Date	Time (hrs) ¹	Descriptor (dBA re 20 µPa)			Limit	Meteorology ²	Description and SPL, dBA
		L _{Amax}	L _{Aeq}	L _{A90}			
19/11/2025	09:47 (Day)	85	64	39	43	WD: SE WS: 0.3m/s Rain: Nil	Birds 35-52
							Traffic 36-85
							Insects 34-37
							Other industrial 36-47
							Quarry truck entry/ exit 35-44 (3 minutes)
							Quarry mobile plant 36-38 (2 minutes)
							Quarry L _{Aeq} (15min) Contribution
							40
							Birds 32-51
							Traffic 32-81
19/11/2025	06:41 (Morning Shoulder)	81	58	37	40/50	WD: E WS: 0.1m/s Rain: Nil	Offsite truck idle 50-56
							Other industrial <37
							Quarry truck exit 35-42 (2 minutes)
							Quarry L _{Aeq} (15min) Contribution
							<35
							Quarry L _{A1} (1min) Contribution
							<42

Note 1: Day - the period from 7am to 6pm Monday to Saturday and the period from 8am to 6pm Sunday and public holidays, EPL #6535.

Note 2: Meteorological data obtained from direct measurement by the operator and by BoM Mangrove Mountain AWS, NSW Site #61375.

4.6 Assessment Results – Location EPA 5

The results of the attended noise measurements at location EPA 5 for the [Comments] survey are summarised in **Table 7** with the relevant EPL limits, the calculated quarry noise contribution and prevailing meteorological conditions at the time of each measurement.

Table 7 Operator-Attended Noise Survey Results – EPA 5							
Date	Time (hrs) ¹	Descriptor (dBA re 20 µPa)			Limit	Meteorology ²	Description and SPL, dBA
		L _{Amax}	L _{Aeq}	L _{A90}			
19/11/2025	07:37 (Day)	87	62	37	43	WD: NE WS: 0.3m/s Rain: Nil	Rooster 37-55
							Birds 34-64
							Traffic 36-87
							Aircraft 43-55
							Quarry inaudible
Quarry L _{Aeq} (15min) Contribution							<32
19/11/2025	06:23 (Morning Shoulder)	90	68	43	40/50	WD: E WS: 0.1m/s Rain: Nil	Traffic 37-90
							Rooster 39-58
							Birds 58-53
							Sprinklers <35
							Quarry inaudible
Quarry L _{Aeq} (15min) Contribution							<33
Quarry L _{A1} (1min) Contribution							<40

Note 1: Day - the period from 7am to 6pm Monday to Saturday and the period from 8am to 6pm Sunday and public holidays, EPL #6535.

Note 2: Meteorological data obtained from direct measurement by the operator and by BoM Mangrove Mountain AWS, NSW Site #61375.

4.7 Assessment Results – Location EPA 6

The results of the attended noise measurements at location EPA 6 for the [Comments] survey are summarised in **Table 8** with the relevant EPL limits, the calculated quarry noise contribution and prevailing meteorological conditions at the time of each measurement.

Table 8 Operator-Attended Noise Survey Results – EPA 6							
Date	Time (hrs) ¹	Descriptor (dBA re 20 µPa)			Limit	Meteorology ²	Description and SPL, dBA
		L _A max	L _A eq	L _A 90			
19/11/2025	10:32 (Day)	77	49	37	43	WD: SE WS: 0.3m/s Rain: Nil	Birds 34-52
							Traffic 35-77
							Local residential noise 38-49
							Windblown vegetation 35-39
							Insects 34-44
							Other industrial noise 37-45
							Quarry processing <36-40 (throughout measurement)
							Quarry mobile plant 37-42 (2 minutes)
							Quarry L _A eq(15min) Contribution
							39
20/11/2025	06:01 (Morning Shoulder)	78	55	37	40/50	WD: NW WS: 0.1m/s Rain: Nil	Birds 35-56
							Traffic 35-78
							Local residential noise 42-52
							Quarry trucks 37-42 (3 minutes)
							Quarry truck exit 34-36 (15 seconds)
							Quarry L _A eq(15min) Contribution
							37
Quarry L _A 1(1min) Contribution							44

Note 1: Day - the period from 7am to 6pm Monday to Saturday and the period from 8am to 6pm Sunday and public holidays, EPL #6535.

Note 2: Meteorological data obtained from direct measurement by the operator and by BoM Mangrove Mountain AWS, NSW Site #61375.

4.8 Assessment Results – Location EPA 7

The results of the attended noise measurements at location EPA 7 for the [Comments] survey are summarised in **Table 9** with the relevant EPL limits, the calculated quarry noise contribution and prevailing meteorological conditions at the time of each measurement.

Table 9 Operator-Attended Noise Survey Results – EPA 7							
Date	Time (hrs) ¹	Descriptor (dBA re 20 µPa)			Limit	Meteorology ²	Description and SPL, dBA
		L _{Amax}	L _{Aeq}	L _{A90}			
19/11/2025	10:50 (Day)	82	54	40	43	WD: SE WS: 0.4m/s Rain: Nil	Traffic 39-82
							Insects 38-48
							Birds 39-59
							Aircraft 42-53
							Other industrial 38-51
							Quarry truck entry 40-45 (15 seconds)
							Quarry processing 38-41 (throughout)
							Quarry reverse alarm 39-42 (2 minutes)
							Quarry L _{Aeq} (15min) Contribution
							41
20/11/2025	06:22 (Morning Shoulder)	85	56	37	40/50	WD: N WS: 0.1m/s Rain: Nil	Birds 34-62
							Traffic 33-85
							Aircraft 39-44
							Quarry truck exit 36-43 (10 seconds)
							Quarry excavator <35 (20 seconds)
							Quarry truck 35-44 (1 minute)
							Quarry impact 46-48 (1 second)
							Quarry L _{Aeq} (15min) Contribution
							37
							Quarry L _{A1} (1min) Contribution
							48

Note 1: Day - the period from 7am to 6pm Monday to Saturday and the period from 8am to 6pm Sunday and public holidays, EPL #6535.

Note 2: Meteorological data obtained from direct measurement by the operator and by BoM Mangrove Mountain AWS, NSW Site #61375.

4.9 Unattended Road Traffic Noise Results – Location R1

To assess road traffic noise levels associated with quarry related heavy vehicle, an unattended noise monitor was located on the boundary of 4405 Old Northern Road, Maroota, NSW.

The results of the road traffic noise measurements on Wednesday 19 November 2025 summarised in **Table 10**.

As per condition 50 of the quarries Consolidated Consent (#DA 267-11-99, Modification 4), results of the road traffic noise measurements identify that noise levels were influenced by extraneous noise sources such as birds and local road traffic not associated with the quarry. The noise contribution of the quarry related traffic at this location remained below relevant criteria.

Road traffic noise calculations were undertaken to quantify project related road traffic noise contributions at the measurement position using Traffic Noise Model (TNM) by the United States Department of Transport, Federal Highway Administrations Low Volume Calculator Tool at an offset distance of 15m from the road, which is representative of R1. Results of the road traffic noise calculations identify that quarry related heavy vehicles satisfy the relevant road noise criteria, hence would comply at all privately-owned receivers further than 15m from Old Northern Road.

Table 10 Road Noise Survey Results

Operational Period	Number of Quarry Trucks (passbys) ¹	Overall Calculated dB LAeq (dBA re 20 µPa)	Overall Measured dB LAeq (dBA re 20 µPa)	Compliance Limit dB LAeq (period)
Assessment Period – Day (7am to 8am), dB LAeq(1hr)				
7:00am to 8:00am	3	50	70	55
Assessment Period – Morning Shoulder (6am to 7am), dB LAeq(1hr)				
6:00am to 7:00am	2	48	70	50

Note 1: Vehicle flows provided by the quarry.

This page has been intentionally left blank

5 Discussion

5.1 Discussion of Results – Location EPA 1

Monitoring conducted between Wednesday 19 November 2025 and Thursday 20 November 2025 identified that noise emissions were audible during both the morning shoulder and day periods at location EPA 1. The quarry sources during the morning shoulder were mobile plant and a truck exit with an estimated contribution measured at 37dBA for approximately three minutes. The quarry source during the day period was quarry processing, which was audible on ambient lulls, with an estimated contribution measured at <36dBA and therefore satisfied the relevant EPL noise limits.

Extraneous sources such as birds, local residential noise, windchimes, insects, aircraft and traffic were audible during the measurement period.

5.2 Discussion of Results – Location EPA 2

Monitoring conducted between Wednesday 19 November 2025 and Thursday 20 November 2025 identified that noise emissions were audible during both the morning shoulder and day periods at location EPA 2. The quarry sources audible during the day period were road truck entry/exit, processing and mobile plant for with an estimated contribution measured at 42dBA during residential construction/earthwork lulls. The quarry sources audible during the morning shoulder period were mechanical plant and mobile plant with an estimated contribution measured at 36dBA and 40dBA ($LA_{1(1min)}$) and therefore satisfied the relevant EPL noise limits.

Extraneous sources such as birds, other industrial noise, local residential noise, insects, windblown vegetation and traffic were audible during the measurement period.

5.3 Discussion of Results – Location EPA 3

Monitoring conducted between Wednesday 19 November 2025 identified that quarry noise emissions were inaudible during all assessment periods at location EPA 3, therefore the estimated quarry contribution satisfied the EPL noise limits.

Extraneous sources such as traffic, birds, sprinkler noise, rooster, insects and other industrial noise were audible during the measurement period.

5.4 Discussion of Results – Location EPA 4

Monitoring conducted between Wednesday 19 November 2025 identified that noise emissions were audible during the morning shoulder and day assessment periods at location EPA 4. The quarry sources audible during the day period were road truck entry/exit and mobile plant for with an estimated contribution measured at 40dBA. The quarry sources audible during the morning shoulder period were truck entry/ exit with an estimated contribution measured at <35dBA and 42dBA (LA_{1(1min)}), therefore the estimated quarry contribution satisfied the relevant EPL noise limits.

Extraneous sources such as birds, insects, traffic and other industrial noise were audible during the measurement period.

5.5 Discussion of Results – Location EPA 5

Monitoring conducted between Wednesday 19 November 2025 identified that noise emissions were inaudible during all assessment periods at location EPA 5, therefore the estimated quarry contribution satisfied the relevant EPL noise limits.

Extraneous sources such as rooster, birds, traffic, aircraft, sprinkler noise and birds were audible during the measurement period.

5.6 Discussion of Results – Location EPA 6

Monitoring conducted between Wednesday 19 November 2025 and Thursday 20 November 2025 identified that noise emissions were audible during the morning shoulder and day assessment periods on at location EPA 6. The quarry sources audible during the day period were processing and mobile plant with an estimated contribution measured at 39dBA. The quarry sources audible during the morning shoulder period was truck entry/ exit with an estimated contribution measured at 37dBA and 44dBA (LA_{1(1min)}), therefore the estimated quarry contribution satisfied the relevant EPL noise limits.

Extraneous sources such as birds, insects, windblown vegetation, other industrial noise, traffic and local residential noise were audible during the measurement period.

5.7 Discussion of Results – Location EPA 7

Monitoring conducted between Wednesday 19 November 2025 and Thursday 20 November 2025 identified that noise emissions were audible during the morning shoulder and day assessment periods on at location EPA 7. The quarry sources audible during the day period were processing, truck entry and reverse alarms with an estimated contribution measured at 41dBA. The quarry sources audible during the morning shoulder period were trucks, excavator, impact, truck entry/ exit with an estimated contribution measured at 36dBA and 48dBA ($LA_{1(1min)}$), therefore the estimated quarry contribution satisfied the relevant EPL noise limits.

Extraneous sources such as traffic, birds, insects, aircraft, and other industrial noise were audible during the measurement period.

This page has been intentionally left blank

6 Conclusion

Muller Acoustic Consulting Pty Ltd (MAC) has completed a Noise Monitoring Assessment (NMA) for VGT Environmental Compliance Solutions Pty Ltd (VGT), on behalf of Hodgson Quarry and Plant. Monitoring was conducted in accordance with Conditions P1.2 and L3 of the Environmental Protection Licence (EPL #6535) and Conditions 16, 48, 49 and 50 of the Consolidated Consent (Mod 4, DA#267- 11-99). The assessment was completed determine compliance with the EPL and Consent noise limits.

Attended monitoring conducted between Wednesday 19 November 2025 and Thursday 20 November 2025 identified that Roberts Road Sand Quarry noise emissions were audible on several occasions, although satisfying the relevant EPL noise limits. A review of monitoring data and operator attended observations determined that Roberts Road Sand Quarry contributions are below the EPL and Consent limits for all assessment periods.

This page has been intentionally left blank

Appendix A – Glossary of Terms

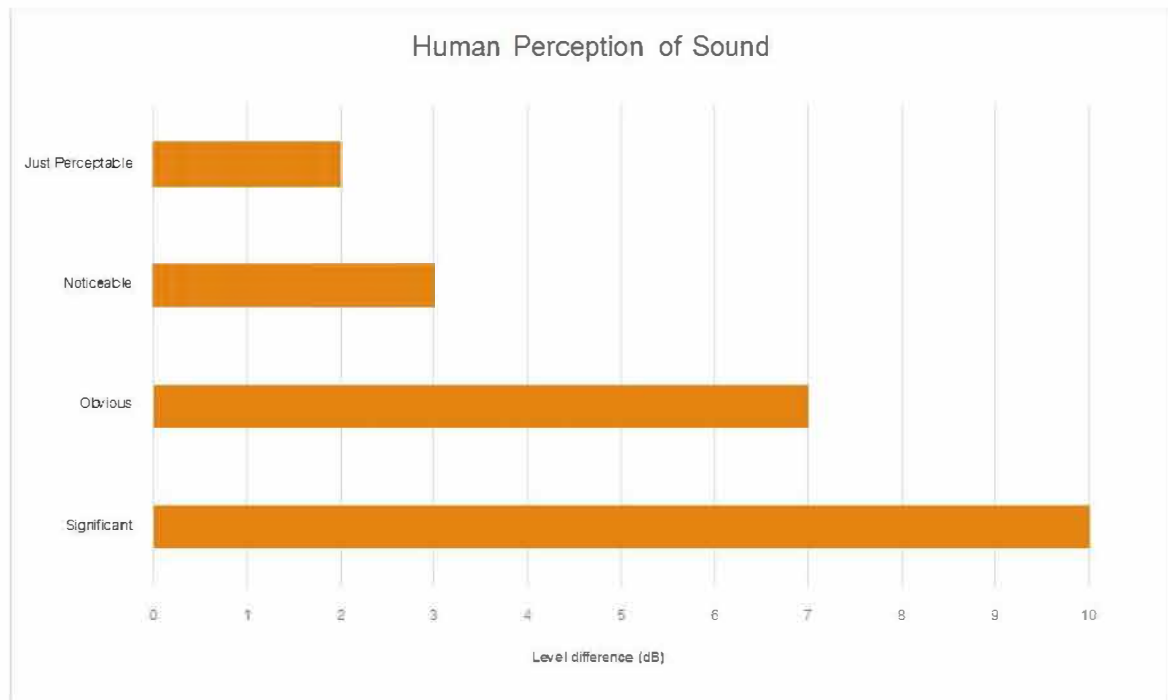
A number of technical terms have been used in this report and are explained in **Table A1**.

Table A1 Glossary of Acoustical Terms	
Term	Description
1/3 Octave	Single octave bands divided into three parts
Octave	A division of the frequency range into bands, the upper frequency limit of each band being twice the lower frequency limit.
ABL	Assessment Background Level (ABL) is defined in the NPI as a single figure background level for each assessment period (day, evening and night). It is the tenth percentile of the measured L90 statistical noise levels.
Ambient Noise	The total noise associated with a given environment. Typically, a composite of sounds from all sources located both near and far where no particular sound is dominant.
A Weighting	A standard weighting of the audible frequencies designed to reflect the response of the human ear to sound.
Background Noise	The underlying level of noise present in the ambient noise, excluding the noise source under investigation, when extraneous noise is removed. This is usually represented by the LA90 descriptor
dBA	Noise is measured in units called decibels (dB). There are several scales for describing noise, the most common being the 'A-weighted' scale. This attempts to closely approximate the frequency response of the human ear.
dB(Z), dB(L)	Decibels Z-weighted or decibels Linear (unweighted).
Extraneous Noise	Sound resulting from activities that are not typical of the area.
Hertz (Hz)	The measure of frequency of sound wave oscillations per second - 1 oscillation per second equals 1 hertz.
LA10	A sound level which is exceeded 10% of the time.
LA90	Commonly referred to as the background noise, this is the level exceeded 90% of the time.
LAeq	Represents the average noise energy or equivalent sound pressure level over a given period.
LAm _{ax}	The maximum sound pressure level received at the microphone during a measuring interval.
Masking	The phenomenon of one sound interfering with the perception of another sound. For example, the interference of traffic noise with use of a public telephone on a busy street.
RBL	The Rating Background Level (RBL) as defined in the NPI, is an overall single figure representing the background level for each assessment period over the whole monitoring period. The RBL, as defined is the median of ABL values over the whole monitoring period.
Sound power level (L _w or SWL)	This is a measure of the total power radiated by a source in the form of sound and is given by $10 \cdot \log_{10} (W/W_0)$. Where W is the sound power in watts to the reference level of 10^{-12} watts.
Sound pressure level (L _p or SPL)	the level of sound pressure; as measured at a distance by a standard sound level meter. This differs from L _w in that it is the sound level at a receiver position as opposed to the sound 'intensity' of the source.

Table A2 provides a list of common noise sources and their typical sound level.

Table A2 Common Noise Sources and Their Typical Sound Pressure Levels (SPL), dBA	
Source	Typical Sound Pressure Level
Threshold of pain	140
Jet engine	130
Hydraulic hammer	120
Chainsaw	110
Industrial workshop	100
Lawn-mower (operator position)	90
Heavy traffic (footpath)	80
Elevated speech	70
Typical conversation	60
Ambient suburban environment	40
Ambient rural environment	30
Bedroom (night with windows closed)	20
Threshold of hearing	0

Figure A1 – Human Perception of Sound





Muller Acoustic Consulting Pty Ltd
PO Box 678, Kotara NSW 2289
ABN: 36 602 225 132
Ph: +61 2 4920 1833

mulleracoustic.com



Appendix I

Biodiversity Monitoring Report

ANNUAL BIODIVERSITY MONITORING REPORT 2025

Prepared for Hodgson Quarries and Plant Pty Ltd

March 2025 V.1



ABN: 13 927 340 723
12 Harts Road
Krawarree NSW 2622
Tel: 02 4847 1207
Mob: 0411 812 775
Email: mmass@southeastenvironmental.com.au
Website: www.southeastenvironmental.com.au

Annual Biodiversity Monitoring Report 2025

**Hodgson Quarries and Plant Pty Ltd
Roberts Road Maroota NSW**

This assessment has been prepared by

South East Environmental

March 2025 V.1

© COPYRIGHT

This report is Copyright Protected, and is not to be reproduced in part or whole or used by a third party without the express written permission of South East Environmental

TABLE OF CONTENTS

1	Introduction	1
1.1	Background	1
1.2	Objectives.....	1
2	Methodology.....	2
2.1	Site history	2
2.1.1	Agricultural use	2
2.1.2	Remnant native vegetation.....	2
2.1.3	Threatened flora habitat.....	2
2.2	Field survey	2
2.3	Criteria to monitor success	3
2.4	Survey limitations	4
3	Results	5
3.1	Remnant Native Vegetation.....	5
3.1.1	Immediately north of Roberts Road site entry gate	5
3.1.2	North eastern corner	6
3.2	Agricultural Land	7
3.2.1	Roberts Road Boundary	7
3.2.2	Old Northern Road Boundary	8
3.2.3	North western corner	9
3.3	Planted Native Vegetation	10
3.3.1	North of Roberts Road entrance gate.....	10
3.3.2	Old Northern Road.....	11
3.3.3	Northern Boundary	12
3.4	Threatened Flora.....	13
3.5	Native Fauna	17
4	Discussion and Recommendations	17
5	Limitations and Assumptions.....	18
6	Qualifications and experience of the Author and Field Ecologist.....	18
7	Bibliography	19
8	Appendix	21

List of Tables

Table 1 Performance and criteria	3
--	---

List of Figures

Figure 1 Remnant vegetation	5
Figure 2 Remnant vegetation	6
Figure 3 Bund wall with native vegetation	7
Figure 4 Agricultural land with grassy bund	8
Figure 5 Agricultural land	9
Figure 6 Bund wall at quarry entrance	10
Figure 7 Planted native vegetation Old Northern Road	11
Figure 8 Planted native vegetation northern boundary	12
Figure 9 <i>Acacia bynoeana</i> onsite	14
Figure 10 <i>Acacia bynoeana</i> habitat	15
Figure 11 Map of vegetation zones	16

Abbreviations

Abbreviation	Description
BC Act	<i>Biodiversity Conservation Act 2016</i>
DPIE	Department of Planning, Industry and Environment
EEC	Endangered Ecological Community
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPBC Act	<i>Environmental Protection and Biodiversity Conservation Act 1999</i>
HTW	High Threat Weed
KPI	Key Performance Indicators
KTP	Key Threatening Processes
LEP	Local Environmental Plan
NSW OEES	New South Wales Office of Environment, Energy and Science
OEMP	Operational Environmental Management Plan
ONR	Old Northern Road
PCT	Plant Community Type
SEPP	State Environmental Planning Policy
THSC	The Hills Shire Council
VIS	Vegetation Information System
WoNS	Weeds of National Significance

1 INTRODUCTION

This Annual Biodiversity Monitoring Report presents the findings of the annual monitoring of the biodiversity value within the Hodgson Quarries operation at Roberts Road Maroota.

1.1 BACKGROUND

Hodgson Quarries and Plant Pty Ltd operates a sand extraction and processing operation on a 28 hectare site including Lot 1 and 2 of DP228308 and Lot 2 of DP312327 Roberts Road Maroota. The quarry operates in compliance to Development Consent File No. S98/00772 issued by the Minister for Urban Affairs and Planning in 2000.

Several modifications have been made to the Development Consent, the most recent (Mod 4) being approved in 2021. Modification 3 triggered a review of the Operational Environmental Management Plan (OEMP) which included the update of a Flora and Fauna Management Plan. A requirement of the Flora and Fauna Management Plan, as addressed in Schedule 2 Condition 55 of the consent, is to develop an ongoing monitoring program for existing vegetated areas to assess their floristic structure, diversity, resilience, robustness to disturbance and fauna species diversity.

1.2 OBJECTIVES

The objectives of this Annual Biodiversity Monitoring Report is to describe the current condition of the vegetation found throughout the site and to advise Hodgson Quarries on the appropriate management measures that should be implemented to meet the expectations of the Flora and Fauna Management Plan (2016) prepared by VGT Pty Ltd.

This report will:

- identify native flora and fauna species, populations and ecological communities known to or likely to occur within the site;
- describe the native vegetation and habitats within the site;
- describe the current condition of the threatened flora and its habitat found within the site;
- determine the legislative and conservation significance of species, populations and ecological communities known or likely to occur within the site with reference to the Commonwealth *EPBC Act 1999* and the *NSW BC Act 2016*;
- recommend appropriate biodiversity and environmental management measures that should be implemented to reach criteria for monitoring success set by the Flora and Fauna Management Plan for the Sand Quarry, Roberts Road Maroota, NSW (2016);
- provide an independent monitoring report for inclusion as part of the external reporting for the quarry Annual Review.

2 METHODOLOGY

2.1 SITE HISTORY

2.1.1 Agricultural use

Much of the undisturbed area on the Roberts Road quarry site is agricultural land. Approximately 9 hectares is currently in use for this purpose, with approximately 0.5 hectares currently under active rehabilitation within the agricultural land area as will be discussed further in this report.

The remaining vegetation within the agricultural land area has had ongoing disturbance over many years which has including timber removal, livestock grazing and fruit orchards. As a result, exotic weed species are common. Farm dams have been dug which once provided irrigation to the fruit orchards and now provide water to livestock and Sunrise Plant Nursery which is located in the north/west corner of the property. They also provide a water source for native and exotic species that occur in the immediate area.

2.1.2 Remnant native vegetation

An area immediately north of the entrance gate along Roberts Road contains remnant native vegetation which has been excluded from the sand extraction operational area. Although this area shows signs of past disturbance, it remains relatively intact and appears to be supporting a reasonable diversity of native flora and fauna given its small size of approximately 1 hectare.

The remnant native vegetation consists of a Sandstone Gully Forest type which was most likely once a moist open forest at the head of the catchment for Coopers Creek which extends further to the north. This vegetation type would have supported several species of canopy tree which were likely to have been harvested for fence post timber in the early European settlement era. Remaining canopy species are most likely regrowth from a clearing event in the early 1900's and provide ample protection for the lower strata. Fencing to exclude livestock has improved the ability for native species, particularly the ground cover stratum, to flourish.

2.1.3 Threatened flora habitat

An area in the north eastern corner of the site contains a threatened flora species which has previously been identified and monitored. The area where this species has been located has had severe disturbance in the past from clearing, grazing and most recently the sand quarry operations.

The area immediately surrounding the threatened species consists of pushed up crushed sandstone material which has resulted in an extremely compacted ground surface. Native shrubs from the soil seed bank and surrounding areas are becoming established despite the harsh growing conditions. It is expected that over time without intervention this area will establish as an extension of the remnant native vegetation adjacent although the plant community type may remain different indefinitely due to the change in surface geology.

2.2 FIELD SURVEY

Botanical surveys of the study area were conducted during March 2025. The survey consisted of a random meander throughout the areas of the property not in current use by quarry operations.

A targeted threatened flora survey was undertaken to locate *Acacia bynoeana* onsite. All flora species recorded are listed in Appendix A of this report.

Opportunistic sightings were also undertaken for indirect evidence of native fauna, including scratches, scats, nests, hollows in use, camps, roosts, den sites etc. Opportunistic sightings of all fauna species were recorded throughout the survey period.

There is no requirement for targeted threatened fauna surveys within the site however incidental sightings from previous reporting periods has been considered for this report.

2.3 CRITERIA TO MONITOR SUCCESS

VGT Pty Ltd 2016 have outlined the Key Performance Indicators (KPI) to measure success of the biodiversity and rehabilitation effort of the flora and fauna management within the Roberts Road quarry site. The following tables depict the performance and completion criteria for the site.

Table 1. Performance and completion criteria for Roberts Road quarry (taken from VGT Pty Ltd 2016)

<i>Performance Criteria being monitored</i>	
<i>Native Vegetation monitoring</i>	Demonstrated use of native plant species naturally occurring in the Maroota area used in all progressive revegetated and rehabilitated areas.
	Low mortality of plants used in progressive revegetation with 75% becoming established 3 years after planting.
	Installation of high durability fencing, with low maintenance requirements and suitable for excluding cattle and other livestock, to be installed prior to the completion of revegetation work areas.
	Fencing surrounding revegetated and rehabilitated areas are maintained in working condition.
	Installation of fencing along the southern fence line and to the north of the site entrance completed during dewatering of the fines ponds and prior to the construction of the new access track.
	Vegetation is retained.
	Low evidence of native vegetation disturbance surrounding the bund walls at the corner of Old Northern Road and Roberts Road.
<i>Fauna Monitoring</i>	Weeds, pests and feral animals are to be controlled.
	Weeds, pests and feral animals are to be controlled.
	Connectivity between current and future rehabilitated areas are established adjacent to existing and future areas of vegetation.
	Patches are not to be separated by more than 10 metres.
	Evidence of varying sized rocks between 20mm and greater than 200mm spread over rehabilitated areas.
	Evidence of logs and other fallen timber spread over rehabilitated areas.
	Ground dwelling fauna species of similar diversity to adjacent areas of similar habitat.
	On completion of the rehabilitation, a suitably qualified ecologist has determined the requirement on whether nest boxes are required. If nest boxed required to be installed a nest box management plan has been prepared.

2.4 SURVEY LIMITATIONS

The survey was conducted within a short timeframe during early autumn. Therefore some plant species may not have been identified due to the survey being performed when not in flower, or when dormant. It is noted that some flora species are seasonal, and may not have been visible at the time of the surveys.

The survey limitations have been addressed through:

- consideration of flora and fauna species known to occur in the locality (including number of records from BioNet);
- consideration of habitat suitability present within the study areas and connectivity to other areas of habitat in the local landscape;
- consideration of past and current weather conditions;
- A conservative approach in assuming the presence of a species that could potentially be present in the study areas.

Where the study area contains potential habitat for threatened fauna species known to occur in the locality, and where survey areas support a likelihood of occurrence, it has been assumed on a conservative approach that such species may occur in the study area.

3 RESULTS

Results from the field surveys conducted over March 2025 have been separated into three distinct areas to enable quantification of condition for each specific location and its monitoring objectives.

3.1 REMNANT NATIVE VEGETATION

The remnant native vegetation is a disturbed patch of native dominant species located in the north eastern corner of the property. The condition of the remnant area can be further divided into two separate areas as determined by disturbance level and the current soil profile available for flora species.

3.1.1 Immediately north of Roberts Road site entry gate

The remnant native vegetation within this area has a mature canopy of Eucalyptus and Angophora species. Lower strata are present including midstorey canopy, shrubs and ground cover. The exclusion of livestock grazing within this area has resulted in an increase of native ground cover species which over time will contribute to a much richer biodiversity value.

Biodiversity functional attributes such as size class of canopy species, litter cover, fallen timber and natural regeneration of species occurring is present within the area. Such attributes are likely to increase over time providing disturbance remains excluded within the area.



Figure 1. Remnant vegetation located immediately north of Roberts Road site entry gate March 2025

3.1.2 North eastern corner

The remnant vegetation within the area of the far north eastern corner of the site has undergone past disturbance which has left the canopy broken. Eucalyptus and Angophora species are recovering throughout much of the area however the mature specimens are spaced apart providing little in canopy protection to the stratum below. The shrub stratum in this area is dominant and in some areas almost impenetrable. In other areas the shrub stratum is sparse and bare ground occurs.

In severely disturbed areas species from the following genus are thriving in the harsh conditions:

- Acacia
- Allocasuarina
- Daviesia
- Dillwynia
- Hakea

Leaf litter is abundant throughout most of this area however fallen timber and size class of canopy species is limited.



Figure 2. Remnant vegetation located in the north eastern corner adjacent to Roberts Road March 2025

3.2 AGRICULTURAL LAND

3.2.1 Roberts Road Boundary

Exotic grasses dominate the agricultural land along Roberts Road. Some native species are present, particularly along the large bund wall which provides protection from the hot westerly sun, including Three-awned Speargrass *Aristida vagans*, Slender Rat's Tail Grass *Sporobolus creber* and Weeping Grass *Microlaena stipoides*. Agricultural weeds occur within the area although they are not considered to be dominant within the landscape. One Weed of National Significance (WoNS) was identified, Fireweed *Senecio madagascariensis*. However, due to no grazing pressure on grass over the past three year period, the Fireweed density has continued to decline due to being outcompeted by thick grass growth.

The native species which have been planted on a bund wall bordering Roberts Road and Old Northern Road are growing well. All of these species have reached reproductive maturity.



Figure 3. Bund wall adjacent to Roberts Road.

3.2.2 Old Northern Road Boundary

This area of agricultural land is dominated by exotic grass species suitable for livestock grazing. Some agricultural weed species occur although they do not dominate the landscape. A WoNS species, Fireweed *Senecio madagascariensis*, was observed in low density within this area. The Common Eastern Toadlet *Crinia signifera* was heard calling from the large dam adjacent to Old Northern Road along the western boundary.



Figure 4. Agricultural land with grassed bund wall adjacent to Old Northern Road

3.2.3 North western corner

A plant nursery is established in the far north western corner of the site. The nursery makes use of water in the farm dams located on site. The agricultural land directly to the east of the nursery site is dominated by exotic grass species suitable for livestock grazing. One WoNS was identified in low density in this location, Fireweed *Senecio madagascariensis*.



Figure 5. Agricultural land adjacent to the plant nursery on Old Northern Road

3.3 PLANTED NATIVE VEGETATION

3.3.1 North of Roberts Road entrance gate

Bottlebrush *Callistemon* species have been planted along the eastern boundary of the property adjacent to the existing native vegetation. These shrubs are well established and provide a screen to Roberts Road. The shrubs provide habitat for small birds and food resources for a range of mammals, birds and invertebrate.

Weeds occur just beyond the staff car park in the grassy area adjacent to the remnant native vegetation. It would benefit the site for the WoNS which occur in this location to be controlled to minimise the risk of spread into the native vegetation. WoNS which occur in this location include Fireweed, Blackberry, Lantana and Bridal Creeper.



Figure 6. Bund wall immediately north of Roberts Road site entrance

3.3.2 Old Northern Road

The southeastern corner and southern boundary of the site has bund walls with planted native trees and shrubs. The trees along Old Northern Road have required pruning due to their close proximity to electrical power lines. As a result some of the trees have perished. The remaining plants appear to be growing well despite the pruning. The bund walls have good coverage of native vegetation with reproduction maturity demonstrated by most species during this monitoring period. The bundwalls along Old Northern Road are within the agricultural land and therefore are moderately covered in suitable grass species for grazing. Some native grass species also occur including Three-awned Speargrass and Weeping Grass.



Figure 7. Planted native vegetation along Old Northern Road

3.3.3 Northern Boundary

A variety of Bottlebrush *Callistemon* species have been planted in two locations along the northern boundary of the property. Exclusion fencing was previously undertaken to exclude grazing stock however the fencing has been removed since stock have not been kept on the property for the past three years. There is one persistent WoNS species present along the fence line of the neighboring property, Lantana *Lantana camara* which has been under a regular management program for the past three years. Quarterly to bi-annual treatment of this species should continue.



Figure 8. Native vegetation growing along the northern property boundary

3.4 THREATENED FLORA

A single threatened flora species was previously identified within the property boundary. During the site survey in March 2025 four *Acacia bynoeana* individuals were located and identified onsite within the verge of the remnant native vegetation area and the sand quarry operational area. Plants varied in size from approximately 50mm – 200mm high, 50mm - 300mm in diameter. All plants had multi-stems which were all healthy and had ample foliage and seed pod indicating the plants had reached reproductive maturity. All three of the plants appeared to be new recruits which were in slightly different locations to the previous reporting period. It would seem that in this particular location, perhaps due to the extreme environmental conditions of the site, this species occurs as a bi-annual rather than a permanent perennial. A new recruit has appeared in the location of the original plant which has had no living specimen in the immediate location for the previous three monitoring periods. This new recruit is likely to have appeared from soil seedbank.

NSW Bionet plant profile describe the habitat for the *Acacia bynoeana* as:

- Occurs in heath or dry sclerophyll forest on sandy soils;
- Seems to prefer open, sometimes slightly disturbed sites such as trail margins, edges of roadside spoil mounds and in recently burnt patches; and
- Associated overstorey species include Red Bloodwood, Scribbly Gum, Parramatta Red Gum, Saw Banksia and Narrow-leaved Apple.

The location in which these plants occurs is a spoil mound pushed up from the silt pond adjacent. There is no canopy nearby which can be associated with the habitat.

No other threatened flora species were identified onsite.



Figure 9. *Acacia bynoeana* identified and located onsite



Figure 10. Typical habitat where *Acacia bynoeana* has been identified and located onsite

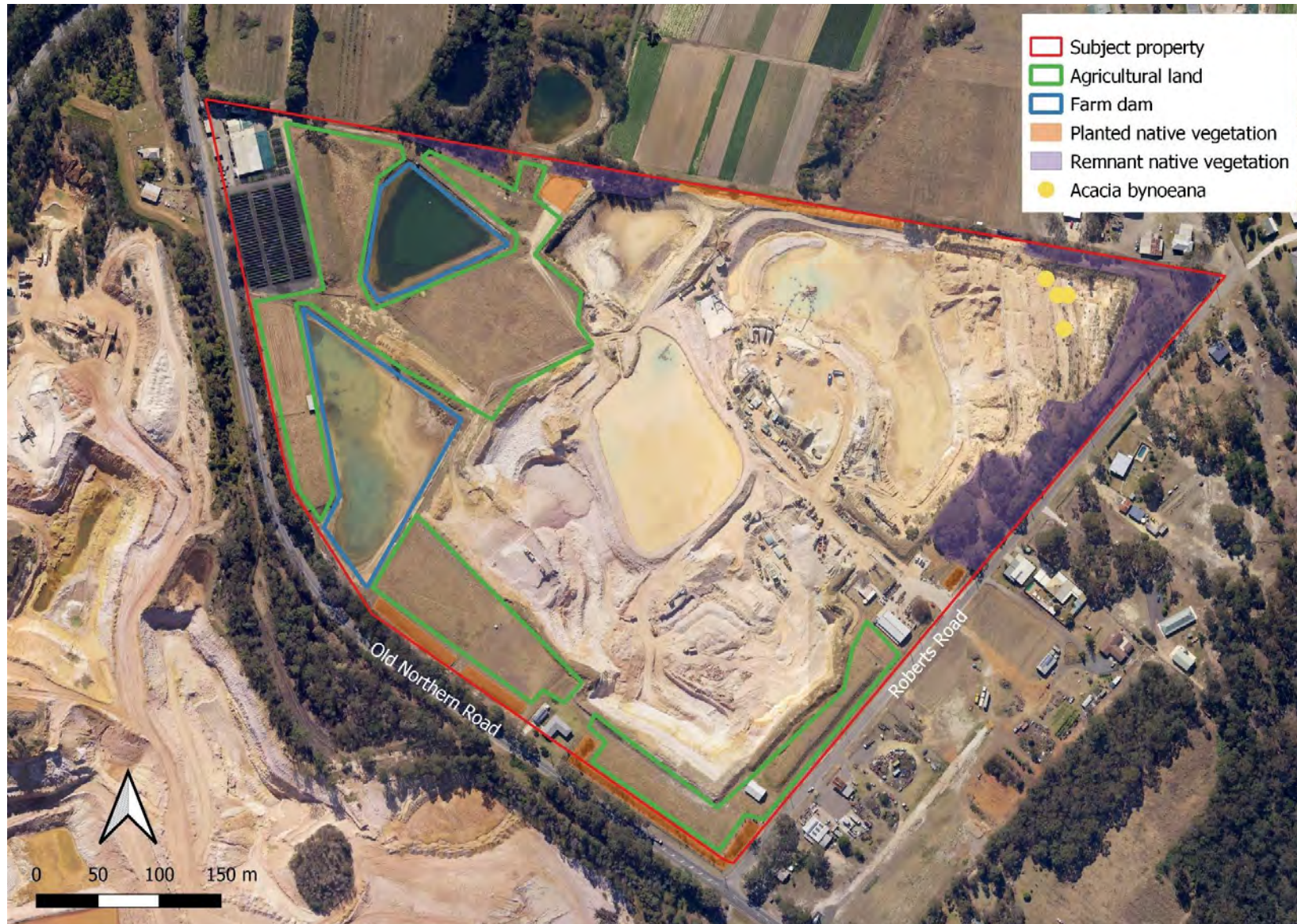


Figure 11. Location of vegetation zones within the Hodgson Quarries Roberts Road site

3.5 NATIVE FAUNA

There was no dedicated native fauna survey undertaken for this report. One threatened fauna species has been previously identified within the property via incidental sightings.

During the botanical survey in March 2025, and throughout the reporting period, opportunistic sightings of native fauna were recorded. In total twenty native species were recorded onsite. One threatened fauna species was again identified onsite being the Glossy Black Cockatoo. These birds were observed feeding in the *Allocasuarina littoralis* located on the northern boundary bund wall within the remnant native vegetation. These birds appear to be repeat local visitors as they have been observed onsite over the past three reporting periods. A complete list of fauna observed during the monitoring period can be found in Appendix C.

Overall the condition of habitat for native fauna species within the property is considered to be low in its current state. The remnant native vegetation areas currently have the most habitat value to support a range of native fauna species however this area is small and not likely to be large enough to support any viable population. Connectivity to native vegetation in all directions is broken due to road easements or surrounding agricultural land use.

4 DISCUSSION AND RECOMMENDATIONS

This is the sixth Annual Biodiversity Monitoring Report produced for Hodgson Quarries Roberts Road Maroota. Rehabilitation work is still in the early stages and will increase with both intensity and measurable criteria in the years that follow, particularly as the quarry operations come to an end.

Natural native regeneration from the soil seed bank is occurring throughout much of the remnant native vegetation areas. The removal of livestock has most likely assisted in the ability for natural regeneration to occur undisturbed over time.

Weeds are present throughout the property with WoNS occurring in low density within the agricultural areas, within the grassy area adjacent to the staff car park and within the planted native vegetation along the northern boundary bund wall. High Threat Weeds (HTW), as determined by the DPE BAM, are also present although most of these weeds can be found within the agricultural land area. It is highly recommended continued management of these weeds to maintain control of their growth and spread is undertaken on a quarterly to bi-annual basis. Recommended weed control methods suitable for use throughout the year is supplied in Appendix D.

There is an intention to undertake some infill native planting over time on the bund wall along the southern end of Roberts Road and the eastern bund wall facing Old Northern Road. Due to overhead powerlines in the immediate area, low growing native shrub species suitable for planting in these locations is highly recommended.

Overall the rehabilitation and biodiversity of the site is within the expectations of the life of the quarry. Continued weed management would benefit the site, particularly the WoNS.

5 LIMITATIONS AND ASSUMPTIONS

This study was limited by the timing and frequency of the survey. There may be flora and/or fauna species present at the site that were not recorded due to their seasonal, territorial or cryptic nature.

It can never be proven that threatened species have not, do not or will not use the site as habitat. The conclusions drawn in this report are a result of testing, observation and experience.

This report describes the habitat and vegetation of the site at the time of the field survey. Vegetation and habitat will change over time and therefore the findings of this report are only relevant for the current proposal and for the duration of the application.

6 QUALIFICATIONS AND EXPERIENCE OF THE AUTHOR AND FIELD ECOLOGIST

The Author and Field Ecologist, Melissa Mass, has formal qualifications including a Bachelor of Applied Science (B. App. Sc.), majoring in Ecology, and a Certificate 3 in Horticulture. Her current Scientific Licence number issued from the NSW OEH is SL101441 with expiry date 31st Oct 2025. Furthermore an Animal Research Authority issued by the NSW Animal Care and Ethics Committee is current to undertake general survey work throughout NSW with expiry date 23rd Mar 2025. Melissa is an accredited Biodiversity Assessor conforming to the requirements as imposed by DPIE with Accreditation number being BAAS18053.

Melissa has been working as an Ecologist for 15 years. Her work has included targeted threatened species assessment and management, reviews of environmental factors, bush regeneration, environmental impact assessments, and environmental survey and monitoring.

Melissa has a strong focus on threatened species ecology and has actively contributed to the Long-nosed Potoroo National Recovery Plan.

7 BIBLIOGRAPHY

Australian Government Com Law. 2014. *Environment Protection and Biodiversity Conservation Act 1999*. [ONLINE] Available at: <http://www.comlaw.gov.au/Details/C2014C00506> [Accessed 15th October 2022].

Australian National Herbarium. 2012. Australia's Virtual Herbarium. [ONLINE] Available at: <http://avh.chah.org.au/> [Accessed on 15th October 2022].

Department of Environment and Climate Change NSW. 2008. Recovery Plan for the Koala (*Phascolarctos cinereus*). [ONLINE] Available at: <http://www.environment.nsw.gov.au/resources/threatenedspecies/08450krp.pdf> [Accessed 15th October 2022].

Department of Lands Spatial Information Exchange. 2014. SIX Maps. [ONLINE] Available at: <http://maps.six.nsw.gov.au/> [Accessed 26th October 2022].

Menkhorst P. & Knight F. 2004. A Field Guide to the Mammals of Australia, 2nd Edition. Oxford University Press, South Melbourne Vic.

New South Wales Consolidated Acts. 2017. *Biodiversity Conservation Act 2016*. [ONLINE] Available at: https://www.legislation.nsw.gov.au/~/_view/act/2016/63 [Accessed 15th October 2022].

NSW Office of Environment and Heritage. 2018. *NSW BioNet*. [ONLINE] Available at: <http://www.bionet.nsw.gov.au/> [Accessed 15th October 2022].

NSW Office of Environment and Heritage. 2018. *NSW BioNet Vegetation Classification*. [ONLINE] Available at: <https://www.environment.nsw.gov.au/NSWVCA20PRapp/default.aspx> [Accessed 15th October 2022].

New South Wales Office of Environment and Heritage 2018. *NSW Threatened Species Profiles*. [ONLINE] Available at: <http://www.environment.nsw.gov.au/threatenedspecies/> [Last accessed 15th October 2022].

New South Wales National Parks and Wildlife Service (2002) Interpretation Guidelines for the Native Vegetation Maps of the Cumberland Plain, Western Sydney, Final Edition NSW NPWS, Hurstville.

PlantNet. 2018. Royal Botanic Gardens and Domain Trust, Sydney. [ONLINE] Available at: <http://plantnet.rbgsyd.nsw.gov.au> [Last accessed 15th October 2022].

Readers Digest. 1998. Readers Digest Complete Book of Australian Birds, 2nd Edition. Readers Digest, Surry Hills NSW.

Simpson K., Day N. & Trusler P. 2004. Field Guide to the Birds of Australia, 7th Edition. Penguin Group, Camberwell Vic.

Strahan R. 1996. A Photographic Guide to Mammals of Australia. New Holland Publishers, Frenchs Forest NSW

The Hills Shire Council (2020) *The Hills Local Environmental Plan 2019*. [ONLINE] Available at <http://www.thehills.nsw.gov.au/IgnitionSuite/uploads/docs/LEP%202019%20document.pdf> [Last accessed 15th October 2022].

Tozer MG, Turner K, Keith DA, Tindall D, Pennay C, Simpson C, MacKenzie B, Beukers P, and Cox S. 2010. *Native vegetation of southeast NSW: a revised classification and map for the coast and eastern tablelands*. *Cunninghamia* (2010) 11(3): 359-406

VGT Environmental Compliance Solutions Pty Ltd. 2018. Landscape and Rehabilitation Plan for the Sand Quarry, Roberts Rd Maroota, NSW. Unpublished Report.

VGT Environmental Compliance Solutions Pty Ltd. 2018. Operational Environmental Management Plan for the Sand Quarry, Roberts Rd Maroota, NSW. Unpublished Report.

VGT Pty Ltd & NGH Environmental. 2016. Flora and Fauna Management Plan for the Sand Quarry, Roberts Rd Maroota, NSW. Unpublished Report.

8 APPENDIX

Appendix A – Native Flora identified and recorded as present onsite October 2022

Scientific Name	Common Name	Status
<i>Acacia bynoeana</i>	Bynoe's Wattle	BC Act – Endangered EPBC Act – Vulnerable
<i>Acacia linifolia</i>	White Wattle	
<i>Acacia myrtifolia</i>	Red-stemmed Wattle	
<i>Acacia parramattensis</i>	Parramatta Wattle	
<i>Acacia suaveolens</i>	Sweet Wattle	
<i>Acacia ulicifolia</i>	Prickly Moses	
<i>Allocasuarina littoralis</i>	Black She-oak	
<i>Allocasuarina paludosa</i>	Swamp She-oak	
<i>Allocasuarina torulosa</i>	Forest Oak	
<i>Amyema congener</i>	Variable Mistletoe	
<i>Angophora bakeri</i>	Narrow Leaved Apple	
<i>Angophora costata</i>	Smooth Barked Apple	
<i>Anisopogon avenaceus</i>	Oat Speargrass	
<i>Aristida vagans</i>	Three-awn Speargrass	
<i>Aristida warburgii</i>	Fine leafed wire grass	
<i>Blechnum cartilagineum</i>	Gristle Fern	
<i>Bossiaea heterophylla</i>	Variable Bossiaea	
<i>Breynia oblongifolia</i>	Coffee Bush	
<i>Callistemon citrinus</i>	Crimson Bottlebrush	
<i>Calochilus paludosus</i>	Red Beard Orchid	
<i>Cassytha pubescens</i>	Devils Twine	
<i>Cheilanthes sieberi</i>	Mulga Fern	
<i>Clematis aristata</i>	Old Mans Beard	
<i>Cyathea australis</i>	Rough Tree Fern	
<i>Dampiera stricta</i>	Blue Dampiera	
<i>Daviesia ulicifolia</i>	Gorse Bitter Pea	
<i>Dianella caerulea</i>	Blue Flax-lily	
<i>Dichelachne micrantha</i>	Shorthair Plumegrass	
<i>Dichondra repens</i>	Kidney Weed	
<i>Dillwynia retorta</i>	Heathy Parrot Pea	
<i>Dodonaea triquetra</i>	Large Leaf Hop Bush	
<i>Drosera auriculata</i>	Sundew	
<i>Drosera peltata</i>	Sundew	
<i>Drosera spathulata</i>	Spoon Leaved Sundew	
<i>Echinopogon ovatus</i>	Forest Hedgehog Grass	
<i>Einadia hastata</i>	Berry Saltbush	
<i>Entolasia marginata</i>	Bordered Panic	
<i>Eucalyptus acmenoides</i>	White Mahogany	
<i>Eucalyptus eugeniodides</i>	Thin Leaved Stringybark	
<i>Eucalyptus haemastoma</i>	Scribbly Gum	
<i>Eucalyptus notabilis</i>	Mountain Mahogany	
<i>Eucalyptus tereticornis</i>	Forest Red Gum	

<i>Eucalyptus umbra</i>	Broad-leaved White Mahogany	
<i>Euchiton sphaericus</i>	Star Cudweed	
<i>Geranium homeanum</i>	Cranesbill	
<i>Gleichenia dicarpa</i>	Pouched Coral Fern	
<i>Glycine clandestina</i>	Twining Glycine	
<i>Gonocarpus teucroides</i>	Raspwort	
<i>Goodenia bellidifolia</i>	Daisy-leaved Goodenia	
<i>Grevillea buxifolia</i>	Grey Spider Flower	
<i>Grevillea speciosa</i>	Red Spider Flower	
<i>Hakea sericea</i>	Needlebush	
<i>Hardenbergia violacea</i>	False Sarsaparilla	
<i>Juncus usitatus</i>	Common Rush	
<i>Kunzea ambigua</i>	Tick Bush	
<i>Leptospermum polygalifolium</i>	Tantoon	
<i>Lindsaea microphylla</i>	Lacy Wedge Fern	
<i>Lomandra longifolia</i>	Spiny head Mat-rush	
<i>Lomandra multiflora</i>	Many-flowered Mat-rush	
<i>Microlaena stipoides</i>	Weeping grass	
<i>Microtis unifolia</i>	Onion Orchid	
<i>Mitrasacme polymorpha</i>	Varied Mitrewort	
<i>Notelaea longifolia</i>	Large Mock Olive	
<i>Oxalis perennans</i>	Native Sorrel	
<i>Ozothamnus diosmifolius</i>	Rice Flower	
<i>Parsonsia straminea</i>	Common Silkpod	
<i>Patersonia sericea</i>	Silky Purple Flag	
<i>Persoonia lanceolate</i>	Lance Leaf Geebung	
<i>Petrophile pulchella</i>	Conesticks	
<i>Phyllota phyllicoides</i>	Heath Phyllota	
<i>Pittosporum undulatum</i>	Sweet pittosporum	
<i>Pomax umbellata</i>	Pomax	
<i>Pratia purpurascens</i>	White Root	
<i>Pteridium esculentum</i>	Bracken Fern	
<i>Scaevola ramosissima</i>	Purple Fan Flower	
<i>Senecio linearifolius</i>	Fireweed Groundsel	
<i>Sporobolus creber</i>	Slender Rat's Tail Grass	
<i>Stylidium lineare</i>	Narrow-leaved Triggerplant	
<i>Syncarpia glomulifera</i>	Turpentine	
<i>Themeda triandra</i>	Kangaroo Grass	
<i>Viola hederacea</i>	Ivy Leaved Violet	
<i>Xanthorrhoea media</i>	Grass Tree	
<i>Xanthosia tridentata</i>	Rock Xanthosia	

Appendix B – Exotic flora identified and recorded as present onsite October 2022

Scientific Name	Common Name	Status
<i>Ageratina adenophora</i>	Crofton Weed	High Threat Weed (HTW)
<i>Anagallis arvensis</i>	Red Pimpernel	
<i>Andropogon virginicus</i>	Whisky Grass	HTW
<i>Araujia sericifera</i>	Moth Vine	HTW
<i>Asparagus asparagoides</i>	Bridal Creeper	WoNS, HTW
<i>Bidens pilosa</i>	Cobblers pegs	HTW
<i>Briza minor</i>	Shivery Grass	
<i>Cestrum parqui</i>	Green Cestrum	HTW
<i>Chloris gayana</i>	Rhodes Grass	HTW
<i>Cirsium vulgare</i>	Spear Thistle	
<i>Conyza bonariensis</i>	Flax-leaf fleabane	
<i>Cynodon dactylon</i>	Couch Grass	
<i>Digitaria sanguinalis</i>	Crabgrass	
<i>Ehrharta erecta</i>	Panic Veldtgrass	HTW
<i>Eragrostis curvula</i>	African Lovegrass	HTW
<i>Gnaphalium coarctatum</i>	Cudweed	
<i>Hypochaeris radicata</i>	Catsear	
<i>Lantana camara</i>	Lantana	WoNS, HTW
<i>Ligustrum sinense</i>	Small-leaf Privet	HTW
<i>Oxalis corniculata</i>	Creeping Woodsorrel	
<i>Paspalum dilatatum</i>	Paspalum	HTW
<i>Paspalum urvillei</i>	Vasey's Grass	
<i>Pennisetum clandestinum</i>	Kikuyu Grass	
<i>Phalaris aquatica</i>	Phalaris	
<i>Phytolacca octandra</i>	Inkweed	
<i>Plantago lanceolata</i>	Lambs Tongues	
<i>Rubus fruticosus</i> sp. agg.	Blackberry	WoNS, HTW
<i>Senecio madagascariensis</i>	Fireweed	WoNS, HTW
<i>Setaria parviflora</i>	Slender Pigeon Grass	
<i>Sida rhombifolia</i>	Paddy's Lucerne	
<i>Solanum mauritianum</i>	Wild Tobacco Bush	
<i>Solanum nigrum</i>	Black Nightshade	
<i>Solanum sisymbriifolium</i>	Sticky Nightshade	
<i>Sonchus oleraceus</i>	Common Sow Thistle	
<i>Trifolium repens</i>	White Clover	
<i>Verbena bonariensis</i>	Purpletop	
<i>Vicia sativa</i>	Common Vetch	

Appendix C – Fauna identified and recorded as present onsite 2022

Scientific Name	Common Name	Observation Type
Bird		
<i>Anthochaera chrysoptera</i>	Little Wattlebird	Observed
<i>Colluricincla harmonica</i>	Grey Shrike-thrush	Observed
<i>Calyptorhynchus lathami</i>	Glossy Black Cockatoo	Observed
<i>Cracticus tibicen</i>	Australian Magpie	Observed
<i>Dacelo novaeguineae</i>	Laughing Kookaburra	Observed
<i>Eopsaltria australis</i>	Eastern Yellow Robin	Observed
<i>Falco cenchroides</i>	Nankeen Kestrel	Observed
<i>Malurus cyaneus</i>	Superb Fairy Wren	Observed
<i>*Manorina melanocephala</i>	Noisy Minor	Observed
<i>Ocyphaps lophotes</i>	Crested Pigeon	Observed
<i>Phaps chalcoptera</i>	Common Bronzewing	Observed
<i>Platycercus eximius</i>	Eastern Rosella	Observed (nesting in fencepost)
<i>Sericornis frontalis</i>	White-browed scrubwren	Observed
Mammal		
<i>*Oryctolagus cuniculus</i>	European Rabbit	Scat and digs
<i>Trichosurus vulpecula</i>	Brush-tailed Possum	Scat
<i>*Vulpes vulpes</i>	European Red Fox	Scat/print
<i>Wallabia bicolor</i>	Swamp Wallaby	Scat
Reptile		
<i>Chelodina longicollis</i>	Snake-necked Turtle	Observed
<i>Intellagama lesueurii</i>	Water Dragon	Observed
<i>Lampropholis guichenoti</i>	Common Skink	Observed
<i>Pseudechis porphyriacus</i>	Red-bellied Black Snake	Observed
<i>Tiliqua scincoides</i>	Eastern Blue-tongue Lizard	Observed
Amphibian		
<i>Crinia signifera</i>	Common Eastern Toadlet	Heard call
<i>Litoria peronii</i>	Peron's Tree Frog	Observed

*Pest species

Appendix D – Recommended weed control for each month of the year (WoNS and HTW only)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
African Lovegrass	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide				Herbicide	Herbicide	Herbicide	Herbicide
Blackberry	Herbicide	Herbicide	Herbicide						Herbicide	Herbicide	Herbicide	Herbicide
Bridal Creeper	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal
Cobblers Pegs	Hand removal	Hand removal	Hand removal	Hand removal					Herbicide	Herbicide	Herbicide	Hand removal
Crofton Weed	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide				Herbicide	Herbicide	Herbicide	Herbicide
Fireweed	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal
Lantana	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide				Herbicide	Herbicide	Herbicide	Herbicide
Paspalum	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide			Herbicide	Herbicide	Herbicide	Herbicide
Rhodes Grass	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide
Whiskey Grass	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Herbicide	Herbicide	Herbicide	Hand removal

Herbicide – Foliar spray with an appropriate product as per the instructions on the label. Foliar spray should be carried out during active growing season.
Hand removal – Necessary when targeted species have reached flowering maturity. Entire plant can be removed or flowering heads may be cut. Removed material should be immediately bagged to prevent spread of seed and appropriately disposed of.

This table should be considered a guide for appropriate treatment during different months of the year. It does not indicate a specified work schedule.

Appendix J

Weed Management Reports

050100150m

This figure may be based on third party data which has not been verified by vgt and may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and vgt does not warrant its accuracy.



South-Eastern Boundary
Weed Name: Fireweed, Whiskey Grass
Treatment Date: 15/8/2022
Treatment: Hand Pulling

Fireweed

- Legend
- Property Boundary

Weed Group

African Lovegrass

Blackberry

Bridal Creeper

Cobblers Peg

Crofton Weed

Fireweed

Lantana

Paspalum

Rhodes Grass

Whiskey Grass

South-Eastern Boundary
Weed Name: Fireweed, Whiskey Grass, Crofton Weed
Treatment: Hand Pulling, Slashing, Herbicide



Crofton Weed



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
African Lovegrass	Herbicide - slashing	Herbicide	Herbicide	Herbicide	Herbicide				Herbicide	Herbicide	Herbicide	Herbicide
Blackberry	Herbicide - too wet	Herbicide	Herbicide						Herbicide	Herbicide	Herbicide	Herbicide
Bridal Creeper	Hand Removal - slashing	Hand Removal	Hand Removal - not found	Hand Removal	Hand Removal	Hand Removal	Hand Removal	Hand Removal	Hand Removal	Hand Removal	Hand Removal	Hand Removal
Cobblers Peg	Hand Removal - slashing	Hand Removal - slashing	Hand Removal - slashing	Hand Removal					Herbicide	Herbicide	Herbicide	Hand Removal
Crofton Weed	Herbicide - slashing	Herbicide	Herbicide	Herbicide	Herbicide				Herbicide	Herbicide	Herbicide	Herbicide
Fireweed	Hand Removal - slashing	Hand Removal - slashing	Hand Removal - none visible	Hand Removal	Hand Removal	Hand Removal	Hand Removal	Hand Removal	Hand Removal	Hand Removal	Hand Removal	Hand Removal
Lantana	Herbicide - too wet	Herbicide	Herbicide	Herbicide	Herbicide				Herbicide	Herbicide	Herbicide	Herbicide
Paspalum	Herbicide - slashing	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide			Herbicide	Herbicide	Herbicide	Herbicide
Rhodes Grass	Herbicide - slashing	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide
Whiskey Grass	Herbicide - slashing	Hand Removal - slashing	Hand Removal - slashing	Hand Removal	Hand Removal	Hand Removal	Hand Removal	Hand Removal	Herbicide	Herbicide	Herbicide	Hand Removal

Appendix K

Example of Checklists

Hodgson Quarries & Plant Pty Ltd

Workplace Environmental Stability Check List

1.0 PURPOSE

The purpose of document is to identify potential failures within the operations of the quarry with reference to dams, slopes / walls, channels and soilways.

2.0 SCOPE

At a minimum complete a visual walk through every month of the site.

Quarry Pit

Are catchment areas pumped out
Generators checked and operational
Generators fully fueled
Pumps checked and operational
Hoses checked and connected
Hill roads clear and accessible
Drains clear and feeding into catchment
Highwalls checked for pooling

Yes No
Yes No
Yes No
Yes No
Yes No
Yes No
Yes No
Yes No

Comments: _____

Mud Dams

Sufficient capacity to take inundation
Overflow plugs checked and clear
Bund walls checked
Generators checked and operational
Generators fully fueled
Pumps checked and operational
Hoses checked and connected

Yes No
Yes No
Yes No
Yes No
Yes No
Yes No
Yes No

Comments: Full generator

Hodgson Quarries & Plant Pty Ltd
WORKPLACE ENVIRONMENTAL STABILITY CHECK LIST
Author: Stuart Reed
Approved by: Martin Hodgson
DATE OF ISSUE: 25/06/25 ISSUE NUMBER: 2.0
PAGE NUMBER: 1 of 2

Hodgson Quarries & Plant Pty Ltd

Clean Water Process Dam
Sufficient capacity to take inundation
Pumps checked and operational
Hoses checked and connected
Bund walls checked

Yes No
Yes No
Yes No
Yes No

Comments: _____

Receiving Water Dams
Sufficient capacity to take pumped water
Bund walls checked

Yes No
Yes No

Comments: _____

Comments / Follow Up Actions: _____

Name: Stuart Reed Date: December 2025

Signature: [Signature]

Hodgson Quarries & Plant Pty Ltd
WORKPLACE ENVIRONMENTAL STABILITY CHECK LIST
Author: Stuart Reed
Approved by: Martin Hodgson
DATE OF ISSUE: 25/06/25 ISSUE NUMBER: 2.0
PAGE NUMBER: 2 of 2

Hodgson Quarries & Plant Pty Ltd

Inducted Truck Driver Code of Conduct Audit

1. Purpose

To ensure all drivers who are approaching & entering the Maroota Site know the correct procedures and are complying with them.

2. Scope

To cover all persons whilst in and about the quarry site.

3. Responsibilities

The Quarry Manager / Site Supervisor have overall responsibility to ensure the observance of the requirements of this procedure.

All personnel within the quarry site have a responsibility to comply with the requirements of this procedure and to at all times follow the directions of the Quarry Manager / Site Supervisor.

4. Procedure (All Drivers Must)

- Do you comply with all NSW government rules and regulations, including all posted school zone and work-site speed limits.

☒ YES

NO

If no please explain: _____

- Do you comply with RMS regulations and never leave the quarry overloaded.

☒ YES

NO

If no please explain: _____

- Do you minimise potential conflict with school buses, observe speed limits when lights are flashing.

☒ YES

NO

If no please explain: _____

- Do hold a valid driver's license for the class of vehicle that is operated today.

☒ YES

NO

If no please explain: _____

- Have you in the last 12 months been given an infringement notice.

YES

☒ NO

If yes please explain: _____

- Do you conduct a prestart on the vehicle to ensure the vehicle is safe to operate.

☒ YES

NO

If no please explain: _____

- Do attend regular safety meetings with the appropriate Manager / Supervisor.

☒ YES

NO

If no please explain: _____

- Do you have your vehicle serviced and maintained as recommended by the manufacturer.

☒ YES

NO

If no please explain: _____

- Has the driver follow all directions of site personnel.

YES

NO

If no please explain: _____

- Has an inspection been completed for tailgate leakage.

YES

NO

If yes please explain: SEE ATTACHED

Has the driver been observed complying with the following

YES

NO

- Comply with Hodgson Quarries SMS.
- Always display courtesy & restraint to others entering and leaving the quarry.
- Maintain on approach to the quarry (entering Roberts Rd) a minimum speed and walking pace whilst in the quarry, never uses compression braking.
- Prior to entering the quarry contacts the Loader Operator via UHF Ch.28, to get permission to enter.
- Wear all appropriate PPE.
- Never approaches an operating mobile machine from the rear.
- If it is necessary to approach a machine makes contact first via radio, otherwise remains in your truck until called to get his or her docket.
- Never approaches machinery until eye contact is made with operator & he/she acknowledges your presence and equipment is grounded.
- When exiting the quarry calls on the radio "Truck up Haul Road".

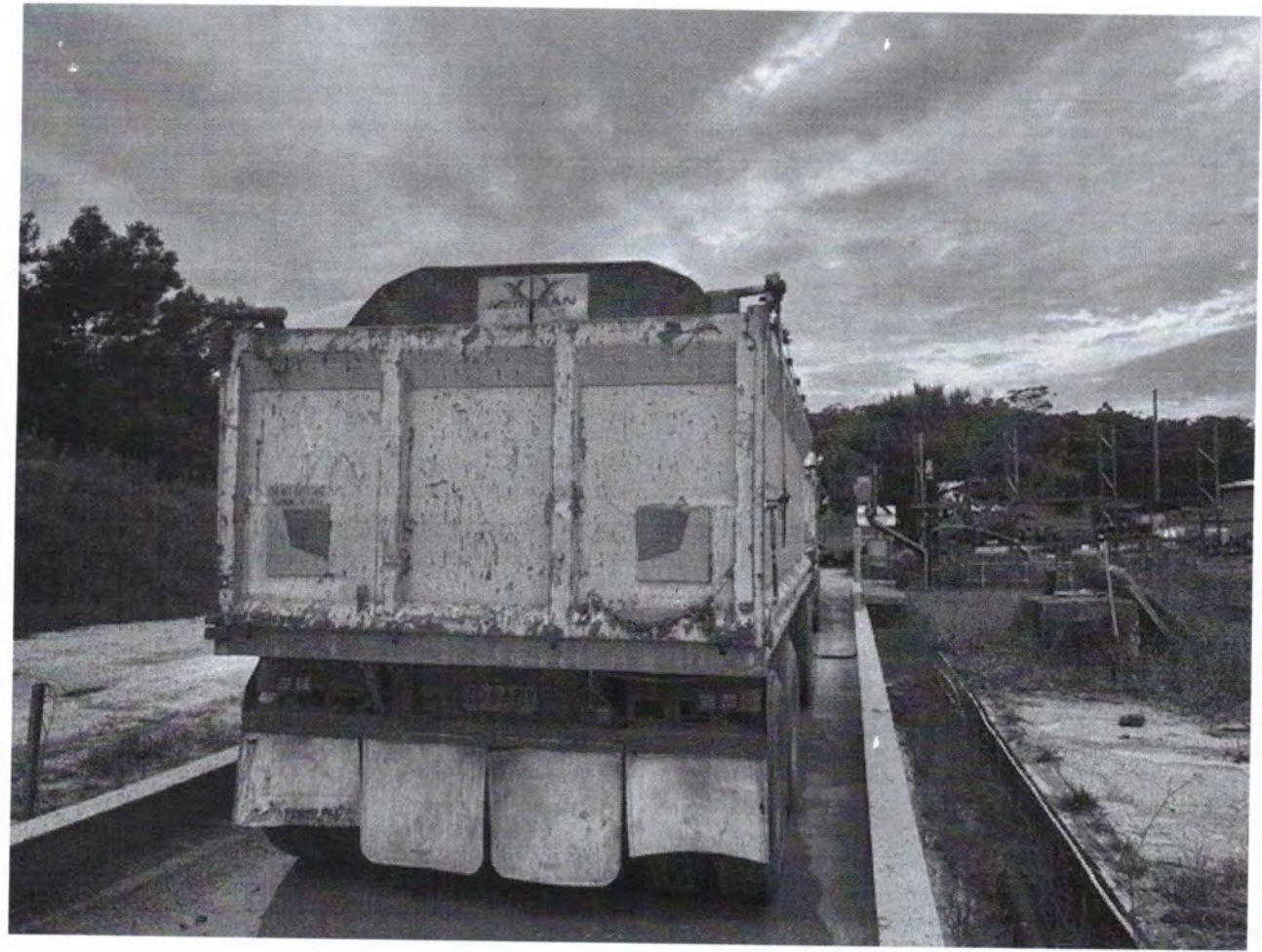
Truck Driver Name: DAKE STONE Date: 16/12/25

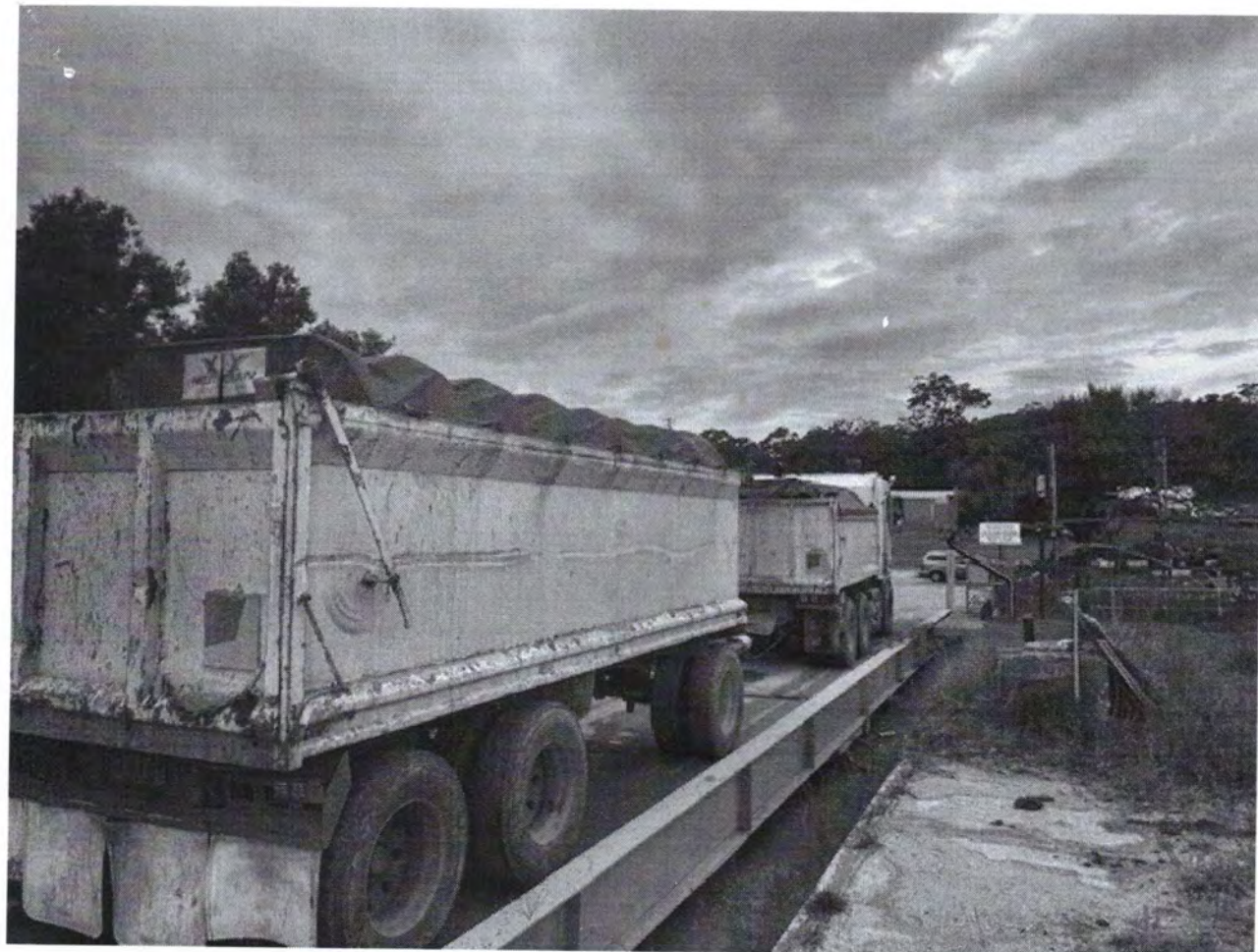
Signature: B haz group

Auditor Name: STUART REED Date: 16/12/25

Signature: SJR

Hodgson Quarries & Plant Pty Ltd	
INDUCTED TRUCK DRIVER CODE OF CONDUCT	
Author: Stuart Reed	
Approved by: Martin Hodgson	
DATE OF ISSUE: 25/06/25	ISSUE NUMBER: 2.0
PAGE NUMBER: 3 of 3	





10 December 2025

Westport Pty Ltd
Level 13, 44 Market Street
Sydney NSW 2000

02 9521 6567

Unit 1A, 29-33 Waratah St
Kirrawee NSW 2232

Reditus Consulting Pty Ltd
ABN: 34 631 168 502

reditus.com.au

Reference: 24264LTR09_v1

Virgin Excavated Natural Material Assessment • Proposed Industrial Development *7-23 Water Street, Strathfield South NSW 2136*

1. INTRODUCTION

Reditus Consulting Pty Ltd (Reditus) was engaged by Westport Pty Ltd (the client) to provide a Virgin Excavated Natural Material (VENM) Assessment for the site located at 7-23 Water Street, Strathfield South, NSW (the Site).

The purpose of this VENM Assessment is to characterise the in-situ natural soil in accordance the NSW EPA (2014) Waste Classification Guidelines.

Note: the scope of this assessment was originally designed to classify natural soils as “excavated natural material”. The soils from the busy pit area had not been excavated at the time of reporting, therefore the “virgin excavated natural material” classification has been applied.

The site details are described in **Table 1**.

Table 1. *Site Identification*

ITEM	DETAIL
Street Address	7-23 Water Street, Strathfield South NSW 2136
Lot and Deposited Plan	7-15 Water Street: Lot 1 DP 603465 17 Water Street: Lot 2 DP603465 19-23 Water Street: Lot 3 DP217450
Site Area	1.32 ha
Assessment Area	Proposed location for an onsite bury pit – approx. 500 m ³ / 1000 tonnes
Local Government Area	Municipality of Strathfield
Zoning	E4 General Industrial as per the <i>Strathfield Local Environmental Plan 2012</i>
Acid Sulfate Soil Map Classification	CSIRO ASRIS A review of the Atlas of Australian Acid Sulfate Soils indicated the site is mapped within a low probability occurrence (6-70%) acid sulfate soil area. Environmental Planning Instrument A review of the Strathfield Local Environment Plan 2012 indicated the site is within a Class 4 acid sulfate area in the acid sulfate soil plan. Class 4 area are described as “acid sulfate soils being likely to be found beyond 2 metres below the natural ground surface”.

ITEM	DETAIL
	Acid Sulfate Soil Risk Map The Botany Bay ASS Risk Map indicated the presence of alluvial soils over a broad shallow valley at the upper reaches of the Georges River where this site is located. Information on the map indicated a low risk of acid sulfate soils and indicated that if acid sulfate soils are present, they would be sporadic.
Previous Use	Quarrying / brickworks - 1908-1956 Service station (Lot 3 and part of Lot 2) – 1957 – 1987 Industrial purposes (warehousing, landscape supplies, brickworks) – 1975 – present
Current Use	<i>Commercial / industrial</i> Including brick recycling, landscaping supplies, general warehousing and commercial outlets
Future Use	<i>Commercial / industrial</i> Warehousing
Trigger for Assessment	To assess natural soils in-situ soils, which are intended to be excavated and relocated (or disposed) offsite for the purposes of facilitating a bury pit on site.

2. SCOPE OF WORK

The following scope of work was completed by Reditus:

- Review of the environmental setting with regards to geology, topography, hydrology and hydrogeology.
- Site attendance for the collection of four soil samples to certify natural material in-situ within the proposed bury pit extent.
- Analysis of soil samples at a NATA accredited laboratory for the ENM Suite, including:
 - Metals (As, Cd, Cr, Cu, Hg, Ni, Pd, Zn).
 - Electrical Conductivity (EC).
 - pH.
 - Polycyclic aromatic hydrocarbons (PAH).
 - Benzene, Toluene, Ethylbenzene and Xylenes (BTEX).
 - Total Petroleum Hydrocarbons (TPH).
 - Foreign Materials (rubber, plastic, bitumen, paper, cloth, paint and wood).
 - Asbestos quantification (500 mL).
- Preparation of this VENM Assessment letter including assessment of; site history, environmental setting, site plans and appraisal of analytical results in consideration to the criteria prescribed by the ENM Order 2014.

This VENM Assessment has been prepared in consultation with and reviewed by an Environment Institute of Australia and New Zealand (EIANZ) Certified Environmental Practitioner - Site Contamination Specialist (CEnvP-SC) in accordance with NSW EPA (2022) *Contaminated Land Consultant Certification Policy*.

3. REGULATORY FRAMEWORK

This VENM Assessment was prepared in accordance with applicable legislation, regulations, and industry guidance, including:

- Contaminated Land Management Act 1997 (the 'CLM Act 1997').
- NSW EPA (2014) Excavated Natural Material Exemption 2014 (the 'ENM Exemption 2014').
- NSW EPA (2014) Excavated Natural Material Order 2014 (the 'ENM Order 2014').
- NSW EPA (2014) Protection of the Environment Operations (Waste) Regulation 2014.
- Protection of the Environment Operations Act 1997 (the 'POEO Act 1997').
- NSW EPA Virgin Excavated Natural Material [webpage](#).

VENM is defined by NSW EPA as naturally occurring rock and soil (such as clay, gravel, sand, soil or rock fines):

- *(a) that has been excavated or quarried from areas that are not contaminated with manufactured chemicals, or with process residues, as a result of industrial, commercial, mining or agricultural activities and*
- *(b) that does not contain any sulfidic ores or soils or any other waste.*
- *and includes excavated natural material that meets such criteria for virgin excavated natural material as may be approved for the time being pursuant to an EPA Gazettal notice .ENM does not include material located in a hotspot; that has been processed; or that contains asbestos, acid sulphate soils (ASS), potential acid sulphate soils (PASS) or sulfidic ores.*

Resource recovery exemptions are limited in their scope to the release of the specific waste from the NSW EPA waste regulatory framework only. The use of an exempted waste material remains subject to all other relevant environmental regulations (such as planning, air and water), including pollution offences under the POEO Act 1997. Adhering to the conditions of an exemption does not provide a defence against offences such as the pollution of land (Section 142A) or water (s.120) and special requirements relating to asbestos waste (Part 7 of the Waste Regulation).

Regardless of any exemption provided by NSW EPA, proponents need to ensure that their waste material is produced to a specification and limited to an appropriate use and application rate that ensures it does not cause harm to the environment or human health. Proponents are responsible for all matters relating to quality, consumer protection and performance standards. An exemption is not an endorsement of the waste material or its performance.

Resource recovery orders and resource recovery exemptions do not release those using them from complying with relevant planning consent requirements. If you wish to use an order or exemption, it is the responsibility of the proponent to seek any necessary development consents from the appropriate regulatory authority.

4. ENVIRONMENTAL SETTING

Environmental setting information for the site is provided in **Table 2** below.

Table 2 Site Setting Information

ITEM	DETAIL
Topography	The natural elevation of the site is approximately 10-12 mAHD sloping gradually towards the southwest. The site has been artificially levelled (relatively flat) with an average elevation of approximately 11 mAHD.
Hydrology	Rainwater from the site is expected to enter drainage pits in the centre of the site and downpipes before discharging to the local stormwater system (Cooks River).
Regional Geology	The 1:100,000 Department of Economic Development Geological Survey of NSW map indicated the site is sited within Quaternary aged alluvium described as silty to peaty quartz sand, silt and clay with ferruginous and humic cementation in places and common shell layers. The site is underlain by Triassic aged Ashfield Shale of the Wianamatta Group.
Hydrogeology	A review of the Hydrogeology map of Australia (Geoscience Australia) indicated that site aquifers are porous, extensive and low to moderate productivity. Groundwater is present within shallow-thin quaternary alluvial deposits, and within deeper fractured/weathered Ashfield Shale. A search of the NSW Department of Primary Industries (Water) Bureau of Meteorology database reported 34 registered groundwater bores within 2 km of the site. Two groundwater bores installed for domestic purposes were located 979 m northwest of site and 1,300 m east of site. All other (32) bores were installed for monitoring purposes.

5. NSW EPA REGULATORY SEARCHES

A search of NSW EPA *Contaminated Land Record of Notices* and *List of Notified Sites* in relation to Sections 58 and 60 of the *CLM Act 1997* was undertaken for the site.

NSW EPA Contaminated Land Record of Notices

The site is not listed on the NSW EPA *Contaminated Land Record of Notices* under Section 58 of the *CLM Act 1997*.

NSW EPA List of Notified Sites

The site is listed on the NSW EPA *List of Notified Sites* (list current as of 11 November 2025) under Section 60 of the *CLM Act 1997*. The notice relates to a former landfill "regulation under CLM Act not required" reported to NSW EPA during May 2022. The site status demonstrates that EPA has completed an assessment of the contamination and decided that regulation under the Contaminated Land Management Act 1997 was not required.

It should be noted that the in-situ area of soil assessed is located outside (80 m to the east) of the quarry area / former landfill which the NSW EPA notice related to.

6. SITE HISTORY

The site was used for quarrying and brickworks from at least 1908 to 1956 by Strathfield Engineering Pty Ltd. Filling of the quarry pit was reportedly undertaken between 1961 and 1965, which was understood to comprise of excess material from the concrete batch plant and surrounding industrial properties. In 1957 the site was subdivided and used for a variety of industrial purposes, including warehousing, landscape supplies and carrier businesses. Most notably a service station (operated by BP Australia) occupied Lot 3

and part of Lot 2 from 1957 to 1987. The site continued to be used for various industrial purposes, including carrier business, manufacturing and brick recycling to the present day.

It should be noted that the in-situ area of soil assessed is located outside of the quarry area and areas where underground petroleum storage systems were present.

7. METHODOLOGY

The sampling rationale is summarised in **Table 3** and was based on the total volume of anticipated “borrow” material required for the bury pit. Four soil samples were collected by a qualified Reditus Environmental Scientist on 26 November 2025. The location of the sampling locations are shown on **Figure 1, Appendix A**.

Table 3. Sampling Rationale

LOCATION ID	RATIONALE OF LOCATION	ANALYSIS
SP10 <i>Samples</i> <i>SP10_01 –</i> <i>SP10_04</i>	The sampling density was tailored to the site to characterise the volume of excavated material anticipated to be sent offsite for relocation or disposal. The sampling density complies with the minimum recommended sampling requirements prescribed by the ENM Order 2014 for 500-1,000 tonnes of soil (Table 1 of the ENM Order 2014).	- ENM Suite including metals, EC, pH, PAHs, BTEX, TPH, foreign materials (rubber, plastic, bitumen, paper, cloth, paint and wood). - Asbestos identification.

Soil samples were collected with assistance from an excavator. Reditus directed the excavator operator to remove existing fill soils from each sampling location, before removing a portion of the underlying natural soils within the proposed bury pit extent. Soil samples were temporarily stockpiled adjacent to each excavation, utilising the following procedures to ensure representative sampling:

- Samples were collected in laboratory-supplied 250 mL glass jars with Teflon seals.
- Samples were collected from 0.1 m of the surface of the stockpile using either nitrile gloves which were replaced between each sample, or by using a clean stainless-steel trowel. The trowel was decontaminated prior to use and between sampling locations using a by rinsing with a phosphate free detergent (Liquinox) and potable water. The sampler adorned new, clean nitrile gloves during sampling to prevent cross-contamination.
- Samples were placed in an ice-filled esky and immediately transported to a National Association of Testing Authorities (NATA) accredited laboratory under strict Chain of Custody (COC) conditions.

Soil samples were collected in accordance with Reditus standard operation procedures which are prepared in accordance with:

- National Environment Protection Council (2013) *National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013*, 1999 revised 2013.
- Standards Australia (2005) Guide to the investigation and sampling of sites with potentially contaminated soil. Part 1: Non-volatile and semi-volatile compounds, Australian Standard 4482.1-2005.
- Standards Australia (1999) Guideline to the sampling and investigation of potentially contaminated soil. Part 2: Volatile substances, Australian Standard 4482.2-1999.

8. RESULTS

Field Observations

The following field observations were recorded during the soil sampling event:

- Natural soils were excavated from a total of four locations within the proposed bury pit extent. Reditus anecdotally understands that the soil encountered at each of the excavation areas across the site were relatively similar to one another.
- Fill materials had been previously placed atop of natural soils for the purposes of constructing a piling platform in the vicinity of the proposed bury pit extent. These fill materials primarily consisted of recycled sand and clays from previous excavation works across the site.
- Stockpiled natural soils were characterised as dry, medium – high plasticity, clays / sandy clays (greys, oranges and reds). Some foreign materials were noted within the top layer of the excavated natural material, including bricks and concrete fragments. These were excluded from the scope of this ENM assessment.

Photographs of the soil sampling event are provided in **Appendix B**.

QA/QC Assessment

The following field quality assurance / quality control (QA/QC) procedures were applied during soil sampling works:

- Soil sampling was conducted by an appropriately trained and qualified Reditus employee who is experienced in the collection of environmental samples.
- Reditus standard operating procedures, Australian Standards and industry best practice were followed during sampling.
- Reusable equipment (i.e. stainless-steel trowel) was decontaminated between sampling locations using a phosphate-free detergent and potable water. Reditus considers this decontamination method to be suitable for the sampling event.
- Reditus is confident that cross contamination has not occurred, and primary samples are representative of actual onsite conditions.

The following laboratory QA/QC procedures were applied for analytical analysis of soil samples:

- Samples were analysed at Envirolab Services Pty Ltd which is accredited by NATA to ISO/IEC 17025 with the accreditation number 2901.
- All holding times were reported as being within specified ranges.
- The EQLs are appropriate.
- The chain-of-custody form was complete and appropriate.
- All samples were received by the laboratory and analytical results reported including laboratory QA/QC.

The sampling methodologies used by Reditus during this investigation have been designed to limit uncertainty in the results. Reditus is confident that the results of this investigation give an accurate representation of stockpiled soils at the site.

Analytical Results

The soil analytical results were compared to the criteria listed within Table 4 of the ENM Order 2014. Copies of the laboratory reports are provided in **Appendix C**. A summary of the analytical results assessed

against the criteria is provided in **Table 4** below. No asbestos was detected at the laboratory reporting limit of 0.01% w/w for all samples.

Table 4. Summary of Analytical Results against the Assessment Criteria

ASSESSMENT CRITERIA			ANALYTICAL RESULTS	
CHEMICALS AND OTHER ATTRIBUTES	MAXIMUM AVERAGE CONCENTRATION (mg/kg) ¹	ABSOLUTE MAXIMUM CONCENTRATION (mg/kg) ¹	AVERAGE CONCENTRATION (mg/kg) ¹	MAXIMUM CONCENTRATION (mg/kg) ¹
1. Mercury	0.5	1	<0.1	<0.1
2. Cadmium	0.5	1	<0.4	<0.4
3. Lead	50	100	9.5	16
4. Arsenic	20	40	4.75	7
5. Chromium (III+VI)	75	150	7.25	11
6. Copper	100	200	4	7
7. Nickel	30	60	2.25	4
8. Zinc	150	300	6.25	9
9. Electrical Conductivity	1.5 dS/m	3.0 dS/m	0.088 dS/m	0.130 dS/m
10 pH ²	pH 5 - 9	pH 4.5 - 10	7.38	7.7
11. Total PAHs	20	40	<0.05	<0.05
12. Benzo(a) pyrene	0.5	1.0	<0.05	<0.05
13. Benzene	-	0.5	<0.2	<0.2
14. Toluene	-	65	<0.5	<0.5
15. Ethylbenzene	-	25	<1	<1
16. Xylene	-	15	<1	<1
17. Total Petroleum Hydrocarbons	250	500	-	-
18. Foreign Materials <i>Rubber, plastic, bitumen, paper, cloth, paint, and wood</i>	0.05 %	0.10 %	<0.05 %	<0.05 %

Table Notes

1. mg/kg 'dry weight' unless otherwise specified.
2. The ranges given for pH are for the minimum and maximum acceptable pH values.



9. CONCLUSION AND RECOMMENDATIONS

Based on a review of the site history, soil sampling and analytical results, the natural soils may be classified as **Virgin Excavated Natural Material**, within the proposed bury pit extent.

The assessment relates to the lateral extent of the proposed bury pit and no greater than 2m depth below the natural ground level. The assessment excludes the overlying fill, which must be removed and kept separate from the underlying natural soils.

A total of up to 1,000 tonnes of material within this extent may be classified as VENM based on the number of sampling locations.

A waste generator can use a NSW EPA order and exemption without EPA approval. However, all conditions of an order and exemption must be met for the reuse of the resource recovery waste to be lawful.

Waste disposal must be undertaken in accordance with the POEO Act 1997, the NSW EPA (2014) *Protection of the Environment Operations (Waste) Regulation 2014* and the environment protection license (EPL) of the receiving facility.

This report should be provided to the waste facility to confirm the material can be accepted in accordance with their EPL conditions.

If reuse is planned, the waste generator must also comply with conditions of a development consent and obtain permission from the owner and occupier of the place where the ENM will be reused. It is recommended that a [Notice under Section 143 of the POEO Act 1997](#) is completed by the waste generator and waste receiver.

10. LIMITATIONS

The findings of this report are based on the scope of work outlined in Section 2 of this report. Reditus performed its services in a manner consistent with the normal level of care and expertise exercised by members of the environmental assessment profession. No warranties expressed or implied are made.

Subject to the scope of work, Reditus' assessment was limited strictly to identifying the environmental conditions associated with the site and does not include evaluation of any other issues. The absence of any identified hazardous or toxic materials should not be interpreted as a guarantee that such materials do not exist on the subject property.

This report does not comment on any regulatory obligations based on the findings. This report relates only to the objectives stated and does not relate to any other work undertaken for the client.

All conclusions and recommendations regarding the site are the professional opinions of Reditus personnel involved with the project, subject to the qualifications made above. While normal assessments of data reliability have been made, Reditus assumes no responsibility or liability for errors in any data obtained from regulatory agencies, statements or sources outside of Reditus, or developments resulting from situations outside the scope of this project.

Reditus is not engaged in environmental assessment and reporting for the purpose of advertising sales promoting, or endorsement of any client interests, including raising investment capital, recommending investment decisions, or other publicity purposes. The client acknowledges that this report is for the exclusive use of the client.

11. CLOSURE

We trust that this document meets your project requirements. Should you have any queries please feel free to contact the undersigned.

Sincerely,

Thomas Lancaster
Hydrogeologist

Ashley Barber
Principal Environmental Engineer
EIANZ Certified Environmental Practitioner Site
Contamination Specialist CEnvP SC No. 41210



APPENDICES

Appendix A • Figures

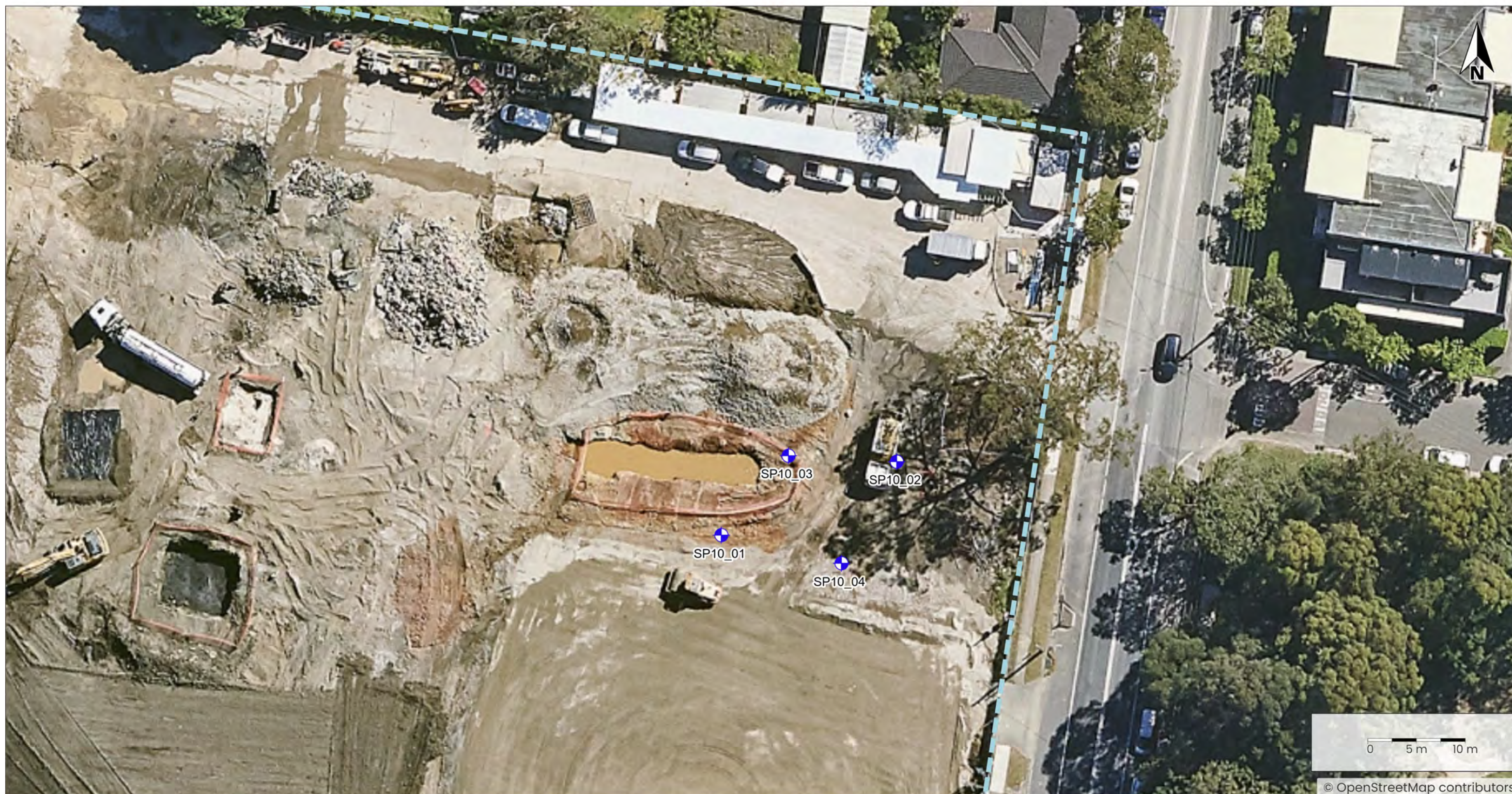
Appendix B • Photo Board

Appendix C • Laboratory Reports

A

Figures





Legend

-  ENM Classification Samples
-  Site Boundary

Proj No: 24264_v2

Scale: 1:400

Date: 24-11-2025

Author: TL

Approver: APB

Data Source: © OpenStreetMap contributors

B

Photo Board



APPENDIX B SITE PHOTOGRAPHS		
Report Title Excavated Natural Material Assessment		
Client Name Westport Pty Ltd	Site Location 7-23 Water Street, Strathfield NSW	Project Number 24264

Photo No.	Date	
1	26 Nov 25	
Direction Facing Northwest		
Description Stockpiled material from SP10_01. Fill materials (bricks) were observed within the top layer of natural material. Sample SP10_01 was collected from deeper material.		

APPENDIX B SITE PHOTOGRAPHS			
Report Title Excavated Natural Material Assessment			
Client Name Westport Pty Ltd	Site Location 7-23 Water Street, Strathfield NSW		Project Number 24264

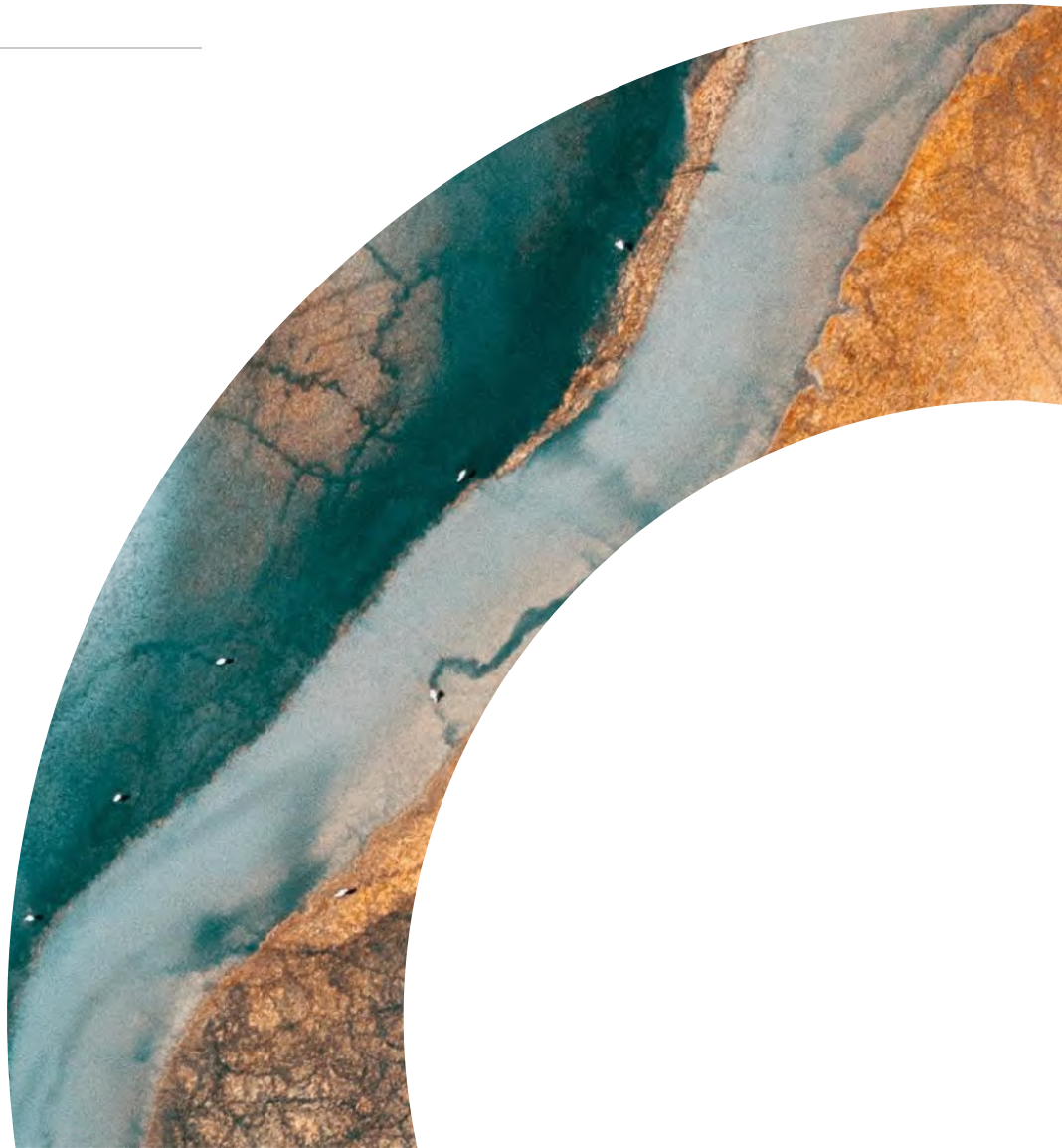
Photo No.	Date	
2	26 Nov 25	
Direction Facing South-east		
Description Test pit excavated for SP10_01. Fill materials from the construction of the onsite piling platform were observed within the top 100-200mm.		

APPENDIX B SITE PHOTOGRAPHS		
Report Title Excavated Natural Material Assessment		
Client Name Westport Pty Ltd	Site Location 7-23 Water Street, Strathfield NSW	Project Number 24264

Photo No.	Date	
3	26 Nov 25	
Direction Facing North		
Description Test pit excavated for SP10_02. Fill materials for the construction of the onsite piling platform and from historical site infilling were observed within the top 400-500mm.		

C

Laboratory Reports



CERTIFICATE OF ANALYSIS 396506

Client Details

Client	Reditus Consulting
Attention	Ashley Barber
Address	Shop 1, 29-33 Waratah St, KIRRAWEE, NSW, 2232

Sample Details

Your Reference	<u>24264 - Strathfield South</u>
Number of Samples	8 Soil
Date samples received	26/11/2025
Date completed instructions received	26/11/2025

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client unless as indicated below in the method summaries. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	03/12/2025
Date of Issue	03/12/2025
Reissue Details	This report replaces R00 created on 03/12/2025 due to: revised report with additional results. Foreign Material
NATA Accreditation Number 2901. This document shall not be reproduced except in full.	
Accredited for compliance with ISO/IEC 17025 - Testing. Tests not covered by NATA are denoted with *	

Asbestos Approved By

Analysed by Asbestos Approved Analyst: Nyovan Moonean
 Authorised by Asbestos Approved Signatory: Nyovan Moonean

Results Approved By

Diego Bigolin, Inorganics Supervisor
 Dragana Tomas, Senior Chemist
 Larry Ye, Senior Chemist
 Nick Sarlamis, Assistant Operation Manager
 Nyovan Moonean, Asbestos Approved Identifier/Counter
 Timothy Toll, Senior Chemist

Authorised By

Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil					
Our Reference		396506-2	396506-4	396506-6	396506-8
Your Reference	UNITS	SP10-01-D	SP10-02-D	SP10-03-D	SP10-04-D
Date Sampled		26/11/2025	26/11/2025	26/11/2025	26/11/2025
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	27/11/2025	27/11/2025	27/11/2025	27/11/2025
Date analysed	-	28/11/2025	28/11/2025	28/11/2025	28/11/2025
TRH C ₆ - C ₉	mg/kg	<25	<25	<25	<25
TRH C ₆ - C ₁₀	mg/kg	<25	<25	<25	<25
vTRH C ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	98	97	102	98

svTRH (C10-C40) in Soil					
Our Reference		396506-2	396506-4	396506-6	396506-8
Your Reference	UNITS	SP10-01-D	SP10-02-D	SP10-03-D	SP10-04-D
Date Sampled		26/11/2025	26/11/2025	26/11/2025	26/11/2025
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	27/11/2025	27/11/2025	27/11/2025	27/11/2025
Date analysed	-	28/11/2025	28/11/2025	28/11/2025	28/11/2025
TRH C ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50
TRH C ₁₅ - C ₂₈	mg/kg	<100	<100	<100	<100
TRH C ₂₉ - C ₃₆	mg/kg	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50
TRH >C ₁₀ -C ₁₆	mg/kg	<50	<50	<50	<50
TRH >C ₁₀ -C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50
TRH >C ₁₆ -C ₃₄	mg/kg	<100	<100	<100	<100
TRH >C ₃₄ -C ₄₀	mg/kg	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50
Surrogate o-Terphenyl	%	83	83	83	82

PAHs in Soil					
Our Reference		396506-2	396506-4	396506-6	396506-8
Your Reference	UNITS	SP10-01-D	SP10-02-D	SP10-03-D	SP10-04-D
Date Sampled		26/11/2025	26/11/2025	26/11/2025	26/11/2025
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	27/11/2025	27/11/2025	27/11/2025	27/11/2025
Date analysed	-	28/11/2025	28/11/2025	28/11/2025	28/11/2025
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5
Surrogate <i>p</i> -Terphenyl-d14	%	99	102	102	101

Client Reference: 24264 - Strathfield South

Moisture						
Our Reference		396506-1	396506-2	396506-3	396506-4	396506-5
Your Reference	UNITS	SP10-01-C	SP10-01-D	SP10-02-C	SP10-02-D	SP10-03-C
Date Sampled		26/11/2025	26/11/2025	26/11/2025	26/11/2025	26/11/2025
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	27/11/2025	27/11/2025	27/11/2025	27/11/2025	27/11/2025
Date analysed	-	28/11/2025	28/11/2025	28/11/2025	28/11/2025	28/11/2025
Moisture	%	18	18	15	15	20

Moisture				
Our Reference		396506-6	396506-7	396506-8
Your Reference	UNITS	SP10-03-D	SP10-04-C	SP10-04-D
Date Sampled		26/11/2025	26/11/2025	26/11/2025
Type of sample		Soil	Soil	Soil
Date prepared	-	27/11/2025	27/11/2025	27/11/2025
Date analysed	-	28/11/2025	28/11/2025	28/11/2025
Moisture	%	19	19	18

Acid Extractable metals in soil						
Our Reference		396506-1	396506-3	396506-5	396506-7	396506-9
Your Reference	UNITS	SP10-01-C	SP10-02-C	SP10-03-C	SP10-04-C	SP10-01-C - [TRIPLICATE]
Date Sampled		26/11/2025	26/11/2025	26/11/2025	26/11/2025	26/11/2025
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	28/11/2025	28/11/2025	28/11/2025	28/11/2025	28/11/2025
Date analysed	-	01/12/2025	01/12/2025	01/12/2025	01/12/2025	01/12/2025
Arsenic	mg/kg	<4	<4	<4	7	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	4	8	6	11	5
Copper	mg/kg	1	4	4	7	2
Lead	mg/kg	4	16	6	12	6
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	1	2	2	4	2
Zinc	mg/kg	5	4	9	7	4

Misc Inorg - Soil					
Our Reference		396506-1	396506-3	396506-5	396506-7
Your Reference	UNITS	SP10-01-C	SP10-02-C	SP10-03-C	SP10-04-C
Date Sampled		26/11/2025	26/11/2025	26/11/2025	26/11/2025
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	01/12/2025	01/12/2025	01/12/2025	01/12/2025
Date analysed	-	01/12/2025	01/12/2025	01/12/2025	01/12/2025
pH 1:5 soil:water	pH Units	7.7	5.5	7.2	6.8
Electrical Conductivity	µS/cm	68	96	130	56

Asbestos ID - Soils					
Our Reference	UNITS	396506-1	396506-3	396506-5	396506-7
Your Reference		SP10-01-C	SP10-02-C	SP10-03-C	SP10-04-C
Date Sampled		26/11/2025	26/11/2025	26/11/2025	26/11/2025
Type of sample		Soil	Soil	Soil	Soil
Date analysed	g	28/11/2025	28/11/2025	28/11/2025	28/11/2025
Sample Mass Tested		Approx. 35g	Approx. 35g	Approx. 35g	Approx. 35g
Sample Description		Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in Soil		No asbestos detected at reporting limit 0.01%w/w Organic fibres detected*	No asbestos detected at reporting limit 0.01%w/w Organic fibres detected*	No asbestos detected at reporting limit 0.01%w/w Organic fibres detected*	No asbestos detected at reporting limit 0.01%w/w Organic fibres detected*
		No visible asbestos detected <0.01%w/w*	No visible asbestos detected <0.01%w/w*	No visible asbestos detected <0.01%w/w*	No visible asbestos detected <0.01%w/w*
Residual Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Additional Comments - Refer to Last Page	-	Nil	Nil	Nil	Nil

Excavated natural material order					
Our Reference		396506-1	396506-3	396506-5	396506-7
Your Reference	UNITS	SP10-01-C	SP10-02-C	SP10-03-C	SP10-04-C
Date Sampled		26/11/2025	26/11/2025	26/11/2025	26/11/2025
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	03/12/2025	03/12/2025	03/12/2025	03/12/2025
Date analysed	-	03/12/2025	03/12/2025	03/12/2025	03/12/2025
Sample Mass Tested	g	9,200	6,900	6,900	6,300
Rubber, plastic, bitumen	%	<0.05	<0.05	<0.05	<0.05
paper, cloth, paint and wood	%	<0.05	<0.05	<0.05	<0.05
Total ENM Foreign Material	%	<0.05	<0.05	<0.05	<0.05

Method ID	Methodology Summary
ASB-003	Asbestos ID –Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques as per Australian Standard 5370. When Inconclusive mineral fibres are detected by polarised light microscopy including dispersion staining, these fibres may or may not be asbestos fibres. To confirm the identities, another independent analytical technique may be required. When asbestos presence is reported below the reporting limit of 0.01%w/w, the result is not covered by AS5370 and is supplied for information purposes only as required by some state jurisdictions.
Inorg-001	pH - Measured using pH meter and electrode. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-002	Conductivity and Salinity - measured using a conductivity cell.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Inorg-080	This method is based on RTA T276 and as per NSW DECC Resource Recovery Exemption Guidelines. RTA T276 requires at least 6kg of sample for this test. Where foreign materials are found, more details may be available on the types and/or quantities in the Comments section of the report. Total ENM Foreign Material is defined as Rubber, plastic, bitumen, paper, cloth, paint and wood.
Metals-020	Determination of various metals/elements by ICP-AES. Total Phosphate determined stoichiometrically from Phosphorus (assumed to be present as Phosphate). Where salts (oxides, chlorides etc.) are calculated from the element concentration stoichiometrically there is no guarantee that the salt form is completely soluble in the acids used in the preparation. Submission of low masses of sample e.g. for dust samples, may result in raised PQLs. Where molecular anion forms are calculated from an element (e.g. SO₄ from S or PO₄ from P stoichiometrically), the assumption is that the element is only present in that molecular anion form.
Metals-021	Determination of Mercury by Cold Vapour AAS.

Method ID	Methodology Summary
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-022/025	Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40). Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL' values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero' values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL' values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

Client Reference: 24264 - Strathfield South

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			27/11/2025	2	27/11/2025	27/11/2025		27/11/2025	[NT]
Date analysed	-			28/11/2025	2	28/11/2025	28/11/2025		28/11/2025	[NT]
TRH C ₆ - C ₉	mg/kg	25	Org-023	<25	2	<25	<25	0	104	[NT]
TRH C ₆ - C ₁₀	mg/kg	25	Org-023	<25	2	<25	<25	0	104	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	2	<0.2	<0.2	0	103	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	2	<0.5	<0.5	0	105	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	2	<1	<1	0	102	[NT]
m+p-xylene	mg/kg	2	Org-023	<2	2	<2	<2	0	106	[NT]
o-Xylene	mg/kg	1	Org-023	<1	2	<1	<1	0	106	[NT]
Naphthalene	mg/kg	1	Org-023	<1	2	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	103	2	98	98	0	102	[NT]

Client Reference: 24264 - Strathfield South

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			27/11/2025	2	27/11/2025	27/11/2025		27/11/2025	[NT]
Date analysed	-			28/11/2025	2	28/11/2025	28/11/2025		28/11/2025	[NT]
TRH C ₁₀ - C ₁₄	mg/kg	50	Org-020	<50	2	<50	<50	0	112	[NT]
TRH C ₁₅ - C ₂₈	mg/kg	100	Org-020	<100	2	<100	<100	0	104	[NT]
TRH C ₂₉ - C ₃₆	mg/kg	100	Org-020	<100	2	<100	<100	0	100	[NT]
TRH >C ₁₀ -C ₁₆	mg/kg	50	Org-020	<50	2	<50	<50	0	112	[NT]
TRH >C ₁₆ -C ₃₄	mg/kg	100	Org-020	<100	2	<100	<100	0	104	[NT]
TRH >C ₃₄ -C ₄₀	mg/kg	100	Org-020	<100	2	<100	<100	0	100	[NT]
Surrogate o-Terphenyl	%		Org-020	86	2	83	83	0	85	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			27/11/2025	2	27/11/2025	27/11/2025		27/11/2025	[NT]
Date analysed	-			28/11/2025	2	28/11/2025	28/11/2025		28/11/2025	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	2	<0.1	<0.1	0	100	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	2	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	2	<0.1	<0.1	0	100	[NT]
Fluorene	mg/kg	0.1	Org-022/025	<0.1	2	<0.1	<0.1	0	106	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	2	<0.1	<0.1	0	104	[NT]
Anthracene	mg/kg	0.1	Org-022/025	<0.1	2	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	2	<0.1	<0.1	0	108	[NT]
Pyrene	mg/kg	0.1	Org-022/025	<0.1	2	<0.1	<0.1	0	106	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	2	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	2	<0.1	<0.1	0	92	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	2	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	2	<0.05	<0.05	0	118	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	2	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	2	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	2	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	105	2	99	103	4	103	[NT]

Client Reference: 24264 - Strathfield South

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			28/11/2025	1	28/11/2025	28/11/2025		28/11/2025	[NT]
Date analysed	-			01/12/2025	1	01/12/2025	01/12/2025		01/12/2025	[NT]
Arsenic	mg/kg	4	Metals-020	<4	1	<4	<4	0	101	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	<0.4	<0.4	0	102	[NT]
Chromium	mg/kg	1	Metals-020	<1	1	4	6	40	99	[NT]
Copper	mg/kg	1	Metals-020	<1	1	1	2	67	94	[NT]
Lead	mg/kg	1	Metals-020	<1	1	4	9	77	105	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	1	<0.1	<0.1	0	102	[NT]
Nickel	mg/kg	1	Metals-020	<1	1	1	2	67	102	[NT]
Zinc	mg/kg	1	Metals-020	<1	1	5	9	57	108	[NT]

Client Reference: 24264 - Strathfield South

QUALITY CONTROL: Misc Inorg - Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			01/12/2025	1	01/12/2025	01/12/2025		01/12/2025	[NT]
Date analysed	-			01/12/2025	1	01/12/2025	01/12/2025		01/12/2025	[NT]
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	1	7.7	7.8	1	100	[NT]
Electrical Conductivity	µS/cm	2	Inorg-002	<2	1	68	74	8	103	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Air volumes are typically provided by customers (often as flow rate(s) and sampling time(s) and/or simply volumes) sampled or exposure times (determines 'volume' passive badges are exposed to)). Hence in such circumstances the volume measurement is inevitably not covered by Envirolab's NATA accreditation. An exception may occur where Envirolab Newcastle does the sampling where accreditation exists for certain types of sampling and hence volume determination(s). Note air volumes are often used to determine concentrations for dust and/or analyses on filters, sorbents and in impingers. For canister sampling, the air volume is covered by Envirolab's NATA accreditation.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates can be downloaded from the [Envirolab Resources website](#) or obtained directly by contacting the laboratory.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

For Dust Deposit Gauge (DDG) analysis the sampling, sampling period and funnel exposure area do not fall under Envirolab's NATA accreditation (unless the Newcastle laboratory where responsible for the sampling), hence the annotation on the DDG units of reporting.

Urine Analysis - The BEI values listed are taken from the 2022 edition of "TLVs and BEIs Threshold Limits" by ACGIH.

Report Comments

Asbestos: A portion of the supplied sample was sub-sampled for asbestos according to ASB-003 asbestos subsampling procedure. We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab/MPL recommends supplying 40-60g or 500ml of sample in its own container.

Note: Samples requested for testing were sub-sampled from jars provided by the client.

Acid Extractable Metals in Soil: The laboratory RPD acceptance criteria has been exceeded for 396506-1 for Pb and Zn. Therefore a triplicate result has been issued as laboratory sample number 396506-9.



SAMPLE RECEIPT ADVICE

Client Details

Client	Reditus Consulting
Attention	Ashley Barber

Sample Login Details

Your reference	24264 - Strathfield South
Envirolab Reference	396506
Date Sample Received	26/11/2025
Date Instructions Received	26/11/2025
Date Results Expected to be Reported	03/12/2025

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	8 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	3
Cooling Method	Ice
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie

Phone: 02 9910 6200
Fax: 02 9910 6201
Email: ahie@envirolab.com.au

Jacinta Hurst

Phone: 02 9910 6200
Fax: 02 9910 6201
Email: jhurst@envirolab.com.au

Analysis Underway, details on the following page:



Sample ID	VTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Acid Extractable metals in soil	Misc Inorg - Soil	Asbestos ID - Soils
SP10-01-C				✓	✓	✓
SP10-01-D	✓	✓	✓			
SP10-02-C				✓	✓	✓
SP10-02-D	✓	✓	✓			
SP10-03-C				✓	✓	✓
SP10-03-D	✓	✓	✓			
SP10-04-C				✓	✓	✓
SP10-04-D	✓	✓	✓			

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.

Requests for longer term sample storage must be received in writing.

Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.

TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

We acknowledge receipt of your samples and Purchase Order (PO) (if provided). If a PO includes your terms & conditions, Envirolab hereby expressly rejects and will not be bound by any external or third-party terms and conditions, including those referenced or attached to a PO.

All services to be performed by Envirolab will be governed exclusively by Envirolab's General Terms and Conditions attached to this acknowledgement ([Envirolab Terms](#)) via hyperlink or found on our websites.

If you do not object in writing within two (2) business days of the date of this acknowledgement, you will be deemed to have accepted the Envirolab Terms. In addition, your provision of further instructions, additional samples, payment of any invoice, or acceptance of services or results from Envirolab will constitute acceptance of the Envirolab Terms. For clarity, Envirolab's commencement or continuation of work following receipt of the PO is performed solely under the Envirolab Terms and does not constitute acceptance of any external terms. All rights are expressly reserved.



02 9521 6567

admin@reditusconsulting.com

**Unit 1A, 29-33 Waratah Street,
Kirrawee NSW 2232**

reditus.com.au

Appendix L Correspondence

NSW Planning ref: DA267-11-99-PA-56

The Proper Officer
Hodgson Quarries and Plant Hire Pty Ltd
PO Box 1778
Gosford New South Wales 2250
04/07/2025

Sent via the Major Projects Portal only

Subject: Roberts Road Quarry - Incident notification - dust exceedance – 27 May 2025

I refer to your incident notification (**Notification**), DA267-11-99-PA-56, for dust exceedances that occurred on 27 May 2025. You submitted this Notification as required by Schedule 2, Condition 68 of DA267-11-99 as modified (the **consent**) to the NSW Department of Planning, Housing and Infrastructure (**NSW Planning**) on 3 July 2025.

NSW Planning has reviewed the Notification and considers it to generally satisfy the conditions of consent in relation to incident reporting.

Schedule 2, Condition 28 of the consent states (our emphasis):

“Air Quality Criteria

28. The Applicant must ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the development do not cause exceedances of the criteria in Table 1 at any residence on privately-owned land.”

It is noted that the Notification does not provide any information on the avoidance and mitigation measures that were taken in response to this exceedance. For future incident notifications associated with Condition 28, it is expected that details regarding what, if any, actions were taken to avoid or mitigate the air quality criteria exceedances.

NSW Planning accepts that this incident was a result of a dust storm, although this does not exempt you from implementing avoidance and mitigation measures.

Should you wish to discuss the matter further, please contact Gabriel Peters Shaw, ATeam Leader on 0288376395 or email compliance@planning.nsw.gov.au

Yours sincerely

A handwritten signature in black ink, appearing to read "G. Peters Shaw".

Gabriel Peters Shaw
A/Team Leader - Metro
Compliance

As nominee of the Planning Secretary



Beyond Compliance

VGT Environmental Compliance Solutions Pty Ltd
ABN 26 621 943 888

Unit 4, 30 Glenwood Drive Thornton NSW 2322
PO Box 2335, Greenhills NSW 2323

Ph: (02) 4028 6412
E: mail@vgt.com.au

www.vgt.com.au