



March  
2023

Annual Review and Compliance  
Report for  
Maroota Sand Quarry  
DA 267-11-99  
Year Ending 31<sup>st</sup> December 2022



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Maroota Sand Quarry

Annual Review and Compliance Report 2021

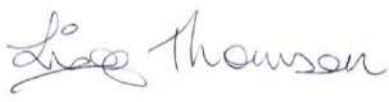
Name of operation	Roberts Rd, Maroota Sand Quarry
Name of operator	Hodgson Quarries and Plant Pty Ltd
Development consent / project approval #	DA 267-11-99
Name of holder of development consent / project approval	Dr L. S. Martin
Annual Review start date	01/01/2022
Annual Review end date	31/12/2022

I, Lisa Thomson, 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 1/1/2021 to 31/12/2021 and that I am authorised to make this statement on behalf of Hodgson Quarries and Plant Pty Ltd.

**Note.**

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	Lisa Thomson
Title of authorised reporting officer	Environmental Consultant
Signature of authorised reporting officer	

**Revision Table**

Date	Version	Author	Reviewed	Approved
29/03/2022	Draft	LT	TO / SR	
29/03/2022	F0	LT	TO / SR	

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# 1 Executive Summary

This Annual Review and Conditions Compliance Report 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 13<sup>th</sup> 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 1<sup>st</sup> January 2022 to 31<sup>st</sup> December 2022.

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.

There were ten DA conditions with non-compliances.

1. Two high Insoluble Solids results in a 12-month period resulted in the Annual Average exceeding the criteria between April and November 2022. The Department was notified and no further action was required. (Schedule 2 condition 28 and 64).
2. Groundwater monitoring results have not been reported to the DPI-Water six-monthly, although all results are included in monthly website updates and Annual Reports (Schedule 2 condition 44).
3. The conservation bond will be calculated during 2023 using latest survey and submitted for approval. (Schedule 2 Conditions 61 and 62)
4. The Environmental Management Plans have not all been updated within 3 months of the consent modification (Schedule 2 condition 20, 22, 58, 67)
5. The condition regarding all conditions be complied with is also non-compliant. (Schedule 2 condition 2)

With the exception of the Insoluble Solids Annual Average at one of three locations, all operational and environmental management criteria within the consent conditions have been met during the report period, 1<sup>st</sup> January to 31<sup>st</sup> December 2022.

## 2 Statement of Compliance

This report audits the compliance of the site to the conditions approved August 2021 (Mod 4) from 1<sup>st</sup> January to 31<sup>st</sup> December 2022. This report adopts the numbering convention given in the Notification of Modification for modification 4 rather than the draft Consolidated Consent, in that it aligns more closely with existing conditions. It is hoped that several numbering and administrative errors can be corrected before issuing the final Consolidated Consent conditions.

Graph 1. Status of Consent Compliance

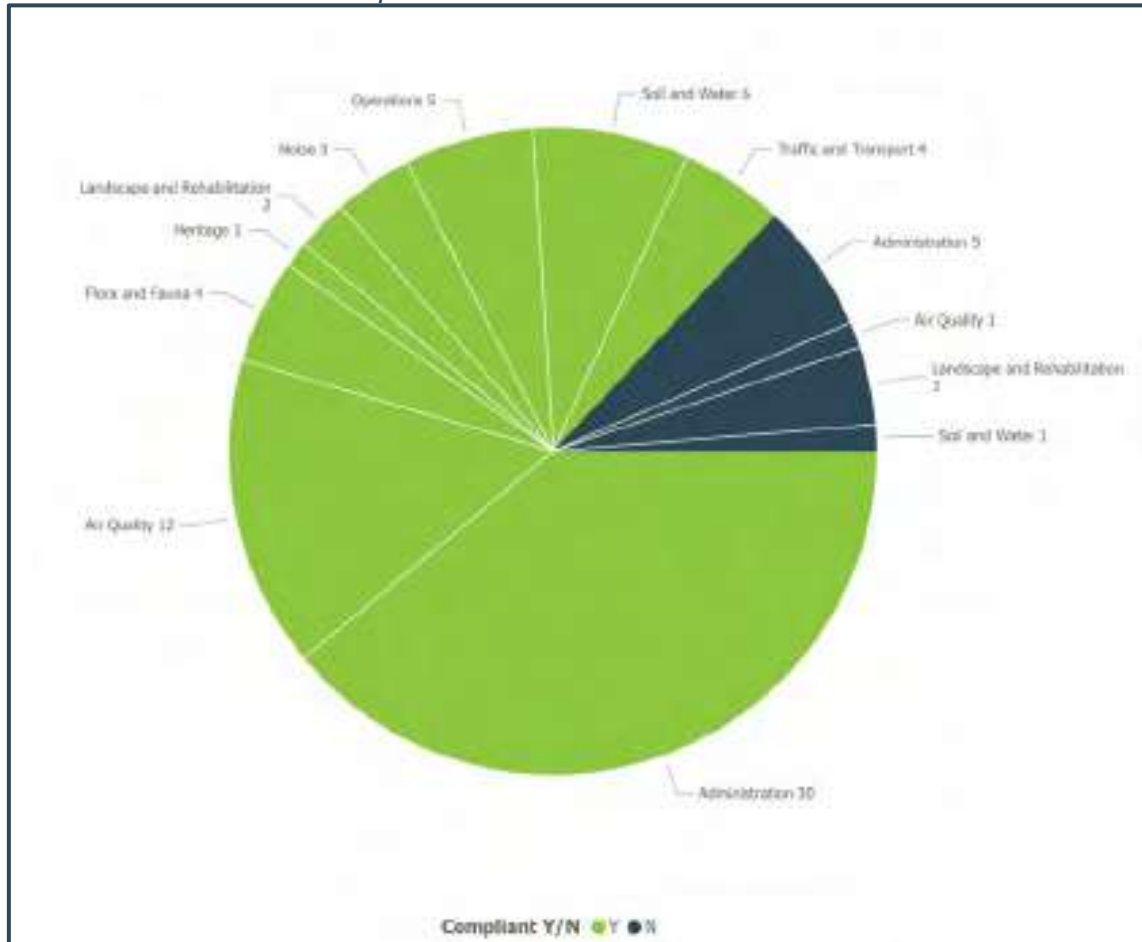


Table 1. Summary of Non-Compliances

Mod 4 Conditions	Condition Text	Compliant Y/N	Details of compliance status
2	The Applicant shall:(a) carry out the development generally in accordance with the EIS, Modification 1, Modification 3 and Modification 2 Modification 2, Modification 3 and Modification 4; and (b) comply with the conditions of this consent	N	



Mod 4 Conditions	Condition Text	Compliant Y/N	Details of compliance status
<b>20</b>	<p>The Operational EMP shall include, but not be limited to:</p> <ul style="list-style-type: none"> <li>(a) environmental objectives for the site;</li> <li>(b) the Air Quality Management Plan (Condition 29);</li> <li>(c) the Water Management Plan (Condition 42);</li> <li>(d) the Noise Management Plan (Condition 46);</li> <li>(e) the Road Noise Management Plan (Condition 48);</li> <li>(f) The Traffic Management Plan (Conditions 50A)</li> <li>(f) (g) the Flora and Fauna Management Plan (Condition 55); and</li> <li>(g) (h) the Rehabilitation Plan (Condition 58).</li> </ul>	N	<p>All current plans and strategies with approvals are available at <a href="http://www.vgt.com.au/hodgsons">www.vgt.com.au/hodgsons</a>. OEMP not updated to included Traffic Management Plan</p>
<b>22</b>	<p>The Applicant shall, in consultation with the Secretary, the EPA and the DPI-Water (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 EMR 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.</p>	N	<p>All current plans and strategies with approvals are available at <a href="http://www.vgt.com.au/hodgsons">www.vgt.com.au/hodgsons</a> OEMP not updated to included Traffic Management Plan</p>
<b>28</b>	<p>The Applicant shall take all practical steps to manage the development so that the ambient air quality goals for total suspended particles (TSP) of 90 µg/m<sup>3</sup> (annual average), particulate matter (PM<sub>10</sub>) of 50 µg/m<sup>3</sup> (24 hours average) and 30 µg/m<sup>3</sup> (annual average) and the dust deposition goal of 4gm/m<sup>2</sup> (annual average) are not exceeded as a result of the development, when measured at any monitoring location specified in the Air Quality Management Plan. 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.</p>	N	<p>On 12/4/22 the site was notified that the Insoluble Annual Average had exceeded the consent criteria. The exceedance continued until Nov 2022. The DPE was notified and required no further action.</p>

Mod 4 Conditions	Condition Text	Compliant Y/N	Details of compliance status
44	<p>The results of the Groundwater Monitoring Program shall be reported the Department and DPI-Water (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.</p>	N	<p>GW Monitoring Program approved Aug 2018. Not reported to DPI-Water 6 monthly. Results on website monthly and in Annual Review submitted annually</p>
58	<p>The Applicant shall rehabilitate the site in a manner that is consistent with the final landform designs in Appendix 1 to the satisfaction of the Secretary. This All rehabilitation must comply with the objectives in Table 1:</p>	N	<p>Rehabilitation Plan approved August 2018. Not updated for Mod 4 final landform</p>
61	<p>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:</p>	N	<p>Approval of expert received 2nd November 2021, and the expert engaged in January 2022. Job on hold</p>
62	<p>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:</p>	N	<p>Approval of expert received 2nd November 2021, and the expert engaged in January 2022. Job on hold</p>

Mod 4 Conditions	Condition Text	Compliant Y/N	Details of compliance status
64	<p>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&amp;A Act or EP&amp;A Regulation.</p> <p>Where any exceedance of these criteria and/or performance measures has occurred, the Applicant must, at the earliest opportunity:</p> <p>(a) take all reasonable and feasible steps to ensure that the exceedance ceases and does not recur;</p> <p>(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</p> <p>(c) implement remediation measures as directed by the Secretary, to the satisfaction of the Secretary.</p>	N	Exceedance of Dust Deposition criteria. No action required
67	<p>Within 3 months of the submission of:</p> <p>(a) an annual review under Condition 66 above;</p> <p>(b) an incident report under Condition 68 below;</p> <p>(c) an audit report under Condition 70 below; or</p> <p>(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.</p> <p>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.</p> <p>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.</p>	N	Only Surface Water MP and Transport MP updated following Mod 4

## 2.1 ACTIONS TO ADDRESS NON-COMPLIANCES

### 2.1.1 Insoluble Solids Annual Average Exceedance

Schedule 2 condition 28 requires the site to adhere to air quality criteria. Hodgson received the monthly dust results report on 11<sup>th</sup> April 2022, stating that the dust deposition gauge located near the entrance to the Roberts Rd site had an Insoluble Solids level of 21.2 g/m<sup>2</sup>/month for the period ending 1/4/2022. Following this high monthly result, Hodgson requested the laboratory to provide an Annual Average calculation, which was received on the 12<sup>th</sup> April

2022. The Annual Average for the D1 gauge was reported as 4.4 g/m<sup>2</sup>/month for the 12 months ending 1<sup>st</sup> April 2022. An investigation was then undertaken, and a letter of explanation uploaded to the DPE portal on 19<sup>th</sup> April 2022 (see [Appendix P](#)). No further comments or requirements were made by DPE.

Additional details are provided in section [6.3.3.2](#).

Condition 64 states that any exceedances of the relevant criteria are a breach of the consent.

### **2.1.2 Conservation Bond**

Schedule 2 condition 61 requires the site to lodge a Conservation and Rehabilitation Bond. An expert and a methodology was approved by the Department, and a survey was undertaken in February 2022. The calculation has not yet been submitted. Condition 62 requires the Bond to be updated following an Independent Environmental Audit, this was not undertaken following the previous IEA.

### **2.1.3 Updating of plans and strategies**

Schedule 2 condition 62 requires the site to review the Rehabilitation Bond after an Independent Environmental Audit. This was not undertaken after the 2020 audit. 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 have been reviewed and updated. Condition 58 requires the Rehabilitation Plan to be updated for changes to the final landform described in Mod 4.

Groundwater monitoring results have not been reported to the DPI-Water six-monthly, although all results are included in monthly website updates and Annual Reports (Schedule 2 condition 44).

The condition regarding all conditions be complied with is also non-compliant. (Schedule 2 condition 2)

## **2.2 ACTIONS REQUIRED FROM PREVIOUS REPORTS**

The 2021 Annual Review and Conditions Compliance Report was submitted to DPE on 30<sup>th</sup> March 2022 through the Major Projects Portal. Acknowledgement was received from DPIE on 30<sup>th</sup> March 2022, and approval of the report received 16/5/2022. No further actions were required.

All actions from the previous Annual Review and Condition Compliance Report were closed out.

### 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 1<sup>st</sup> January 2022 to 31<sup>st</sup> December 2022 and has been conducted against the Modification 4 approved on 13<sup>th</sup> August 2021.

#### 3.3 QUARRY CONTACTS

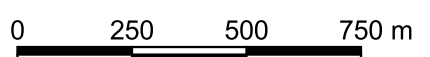
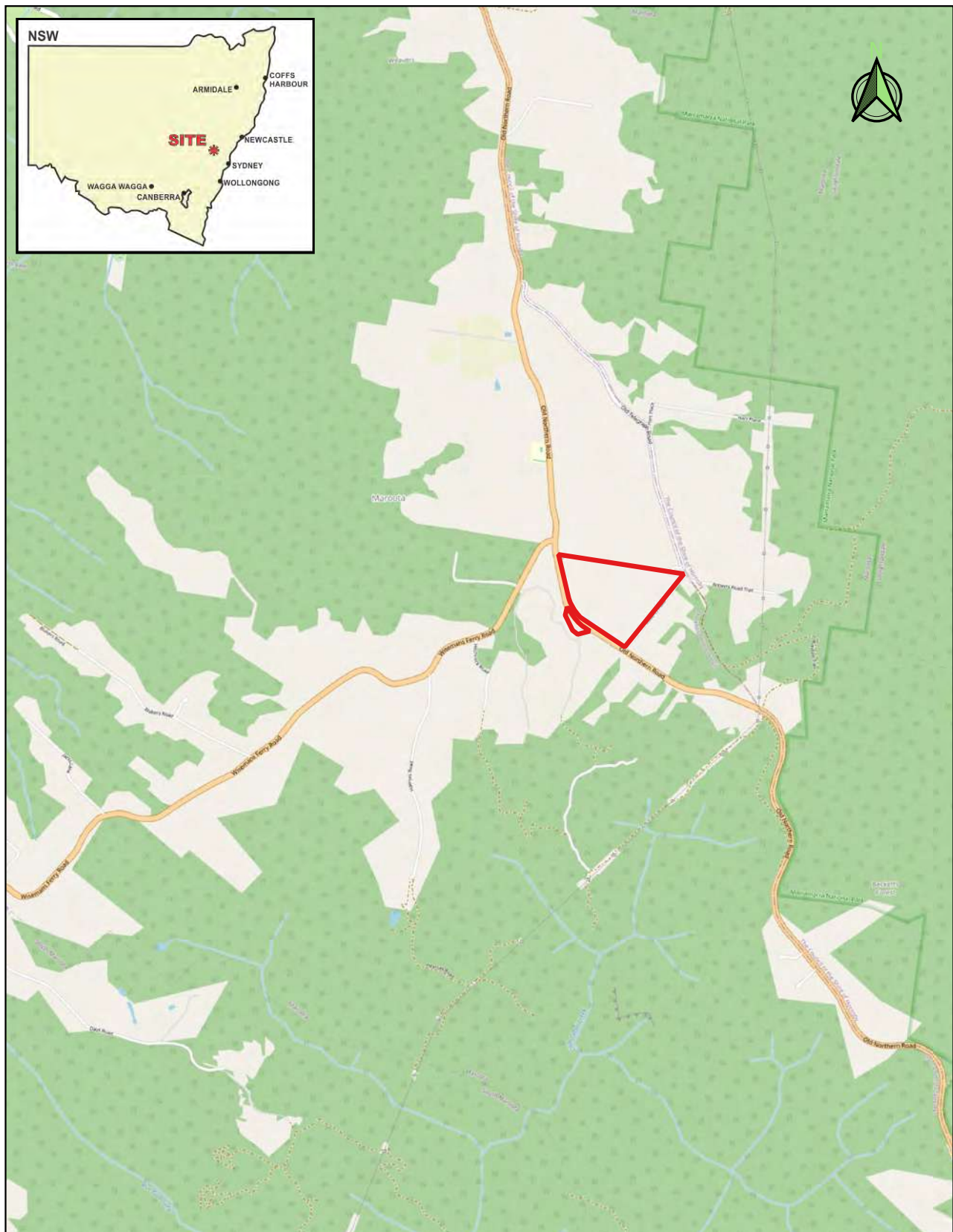
	Production Manager	Environmental Officer
	Martin Hodgson	Stuart Reed
	Hodgson Quarry and Plant Pty Ltd	Hodgson Quarry and Plant Pty Ltd
<b>Address</b>	PO Box 1778, Gosford NSW 2250	PO Box 1778, Gosford NSW 2250
<b>Mobile</b>	0408 251 393	0418 277 871
<b>Phone</b>	(02) 4372 1649	(02) 4372 1649
<b>Email</b>	hodgsonquarries@gmail.com	hodgsonquarries@gmail.com

*Figure One. Location*

<b>Plan of:</b>	Annual Review & Compliance Report 2022 for Roberts Road Maroota Sand Quarry - Site Location	<b>Location:</b>	Maroota Quarry, Roberts Road, Maroota, NSW	<b>Source:</b>	Google OpenStreetMap & nearmap - Image Date 23/06/2022 Zone MGA 56	<b>Plan By:</b>	SK/JD
<b>Figure:</b>	ONE	<b>Council:</b>	Hills Shire Council	<b>Survey:</b>	Not Applicable	<b>Project Manager:</b>	LT
<b>Version/Date:</b>	V0 14/02/2023	<b>Tenure:</b>	Not Applicable	<b>Projection:</b>	GDA2020/MGA Zone 56 EPSG:7856	<b>Office:</b>	Thornton
<b>Our Ref:</b>	12498_HMA_AR2022_Q001_V0_F1	<b>Client:</b>	Hodgson Quarries & Plant Pty Ltd	<b>Contour Interval:</b>	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.



**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 31<sup>st</sup> of May 2000. The first modification to S98/00772 was issued on the 29<sup>th</sup> 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 18<sup>th</sup> of August 2015 with an expiry of the 31<sup>st</sup> 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 18<sup>th</sup> March 2016.

A Modification to Consent (Mod 4) was submitted in November 2019. Mod 4 was granted 13<sup>th</sup> August 2021, see [Appendix B](#).

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

#### 4.1.1 Report Requirements

This Review is required under condition 6 (Conditions Compliance Report) and 66 (Annual Review) of the consolidated consent. Permission to consolidate the two reviews required was obtained from the Department of Planning and Environment on 30/6/16.

*Table 2. Review Requirements*

Consent Condition No	Condition Text	Where addressed in this report
<b>6</b>	The Applicant will 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.	This report and <a href="#">Appendix A</a>
<b>6 (a)</b>	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	<a href="#">Appendix A</a>
<b>6 (b)</b>	(b) a review of the effectiveness of the environmental management of the development	Section <a href="#">6</a>
<b>6 (c)</b>	(c) the results of environmental monitoring required under this Consent or other approvals, including interpretations and discussion by a suitably qualified person;	Section <a href="#">6</a>
<b>6 (d)</b>	(d) a listing of any variations obtained to approvals applicable to the DA since the last report;	Section <a href="#">4.1</a>
<b>6 (e)</b>	(e) a record of all complaints and the actions taken to mitigate all such complaints;	Section <a href="#">5.4</a>



Consent Condition No	Condition Text	Where addressed in this report
<b>6 (f)</b>	(f) a report detailing the rehabilitation measures undertaken since the last report; and	Section <a href="#">6.10</a>
<b>6 (g)</b>	(g) environmental management targets and strategies for stages of the development yet to be completed.	Section <a href="#">7</a>
<b>66</b>	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 2023
<b>66 (a)</b>	(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 <a href="#">5</a> , Section <a href="#">6.10</a>
<b>66 (b)</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: <ul style="list-style-type: none"> <li>• relevant statutory requirements, limits or performance measures/criteria;</li> <li>• monitoring results of previous years; and</li> <li>• relevant predictions in the EIS, Modification 1 and Modification 2;</li> </ul>	Section <a href="#">6</a>
<b>66 (c)</b>	(c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;	Section <a href="#">2</a> , <a href="#">Appendix A</a>
<b>66 (d)</b>	(d) identify any trends in the monitoring data over the life of the development;	Section <a href="#">6</a>
<b>66 (e)</b>	(e) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and	Section <a href="#">6</a>
<b>66 (f)</b>	(f) describe what measures will be implemented over the next year to improve the environmental performance of the development.	Section <a href="#">6</a>

## 4.2 ENVIRONMENTAL PROTECTION AUTHORITY (EPA)

Environmental Protection License 6535 (see [Appendix C](#)) 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 12<sup>th</sup> of March and requires monitoring for noise impacts (see Section [6.8](#) for results). There have been no changes during the report period.

## 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 3](#). Water licenses and their conditions have been included in [Appendix D](#). Compliance with these conditions is included in [Appendix A](#).

Table 3. Relevant Water Licences Summary

Identification	Licence when Registered	Water Access Licence Number (WAL)	Water Approval No./ Reference Number	Purpose	Allocation	Expiry	Bore Status	Comments
<b>PT84PB1</b>	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
<b>PT84MW1</b>	10BL158808	NR	NR	Monitoring	-	perpetuity	In use for water sampling	Installed 20/10/1998. Located near nursery.
<b>PT84MW5</b>	10BL158808	NR	NR	Monitoring	-	perpetuity	Not in use	Collapsed. Replaced by MW8
<b>PT84MW6</b>	10BL605696	NR	NR	Monitoring		perpetuity	In use for water sampling	Installed January 2015. To replace PT84MW4
<b>MW7</b>	10BL605799	NR	NR	Monitoring		perpetuity	In use for water sampling	Installed December 2016
<b>MW8</b>	10BL605799	NR	NR	Monitoring		perpetuity	In use for water sampling	Installed December 2016
<b>MW9</b>	10BL605799	NR	NR	Monitoring		perpetuity	Mined out	Installed December 2016
<b>MW10</b>	10BL605798	NR	NR	Monitoring		perpetuity	In use for water sampling	Installed December 2016
<b>MW11</b>	10BL605797	NR	NR	Monitoring		perpetuity	In use for water sampling	Installed December 2016
<b>MW12</b>	10BL605799	NR	NR	Monitoring		perpetuity	In use for water sampling	Installed December 2016
<b>MW13</b>	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 in order 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.

*Figure Two. Sequence of Extraction*

**Plan of:** Annual Review & Compliance Report 2022 for Roberts Road Maroota Sand Quarry - Sequence of Extraction

**Figure:** TWO

**Version/Date:** V0 14/02/2023

**Our Ref:** 12498\_HMA\_AR2022\_Q002\_V0\_F2

**Location:** Maroota Quarry, Roberts Road, Maroota, NSW

**Council:** Hills Shire Council

**Tenure:** Not Applicable

**Client:** Hodgson Quarries & Plant Pty Ltd

**Source:** nearmap - Image Date 23/06/2022 Zone MGA 56

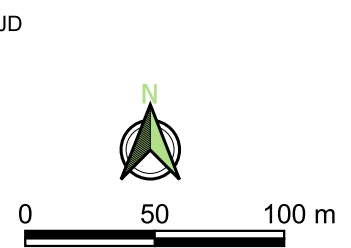
**Survey:** Not Applicable

**Projection:** GDA2020/MGA Zone 56 EPSG:7856

**Contour Interval:** Not Applicable

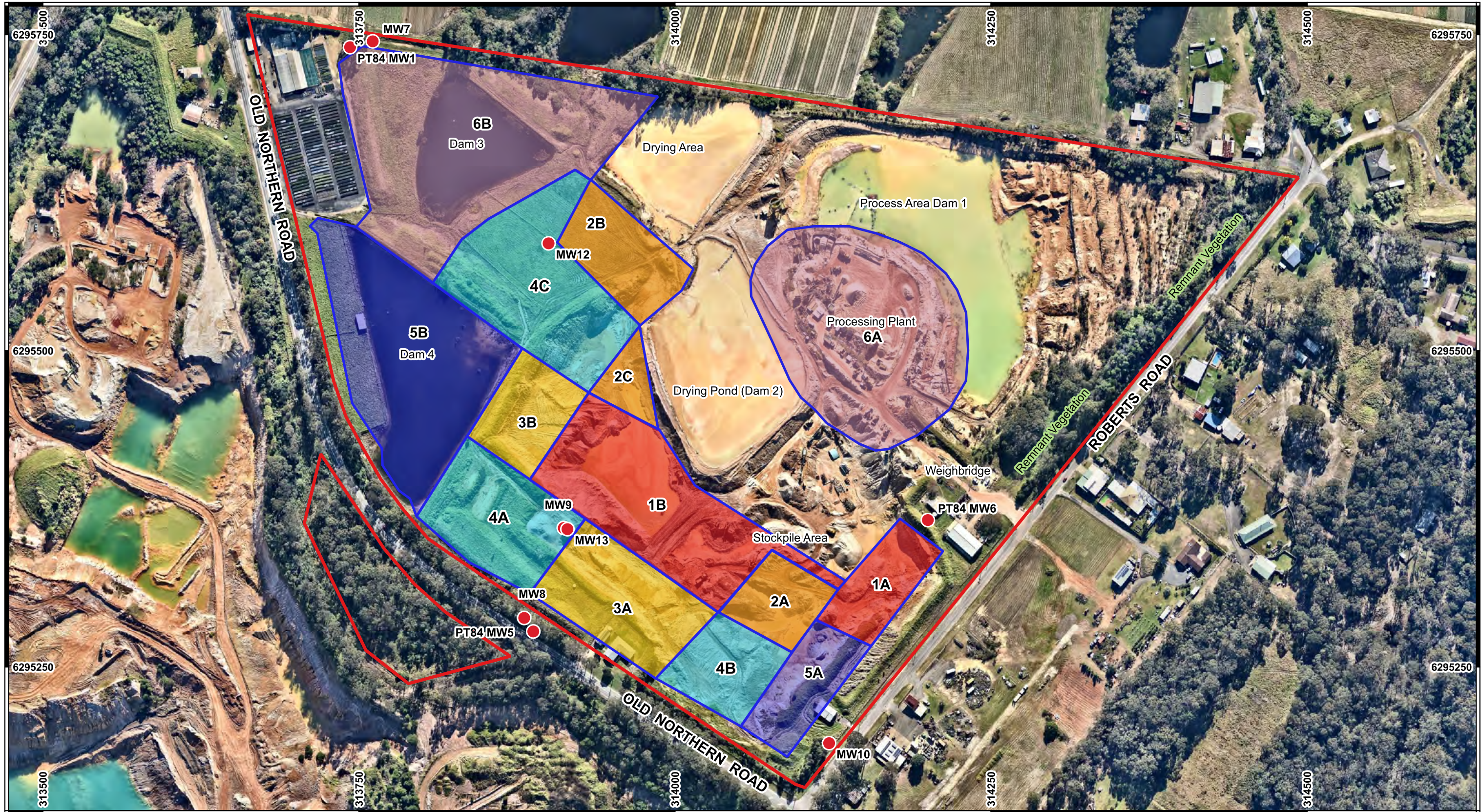
**Plan By:** SK/JD

**Project Manager:** LT



**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.



Note: Phases and Years are indicative only, and are dependent on market demand and product mixing requirements.

*Figure Three. Site Monitoring Locations*

**Plan of:** Annual Review & Compliance Report 2022 for Roberts Road Maroota Sand Quarry - Environmental Monitoring Locations

**Figure:** THREE

**Version/Date:** V0 14/02/2023

**Our Ref:** 12498\_HMA\_AR2022\_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 23/06/2022 Zone MGA 56

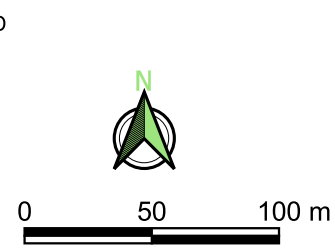
**Survey:** Not Applicable

**Projection:** GDA2020/MGA Zone 56 EPSG:7856

**Contour Interval:** Not Applicable

**Plan By:** SK/JD

**Project Manager:** LT



**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.



Note:

Dam No.	Dam Catchment	Dam Area (m <sup>2</sup> )	Estimated Average Depth (m)	Estimated Volume (m <sup>3</sup> )
1	Processing Dam	-	Ranging from 0.1-3m*	1,240*
2	Holding Dam	12,200	1	12,200
3	Northern Nursery Dam	7,500	2	15,000
4	Southern Nursery Dam	14,500	2	29,000
Total Volume Held				57,440

\* Volume calculated from 12D software to RL 187.2 from modelled contours.  
All dams will be incorporated into the final landform.

- Legend**
- Property Boundary
  - Monitoring Well
  - Dust & HVAS
  - Attended Noise
  - Sprinkler
  - Water Sampling
  - Dust Gauge
  - Weather Station
  - Road Noise Monitoring

*Figure Four. Site Layout*



**Plan of:** Annual Review & Compliance Report 2022 for Roberts Road Maroota Sand Quarry - Site Layout

**Figure:** FOUR

**Version/Date:** V0 14/03/2023

**Our Ref:** 12498\_HMA\_AR2022\_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 23/06/2022 Zone MGA 56

**Survey:** Fyfe Quarry Contours 24/02/2022. NSW Spatial Services ELVISDEM Surrounding Contours Dated May 2017. Spot Heights via Singleton Survey Services Pty Ltd 2023.

**Projection:** GDA2020/MGA Zone 56 EPSG:7856

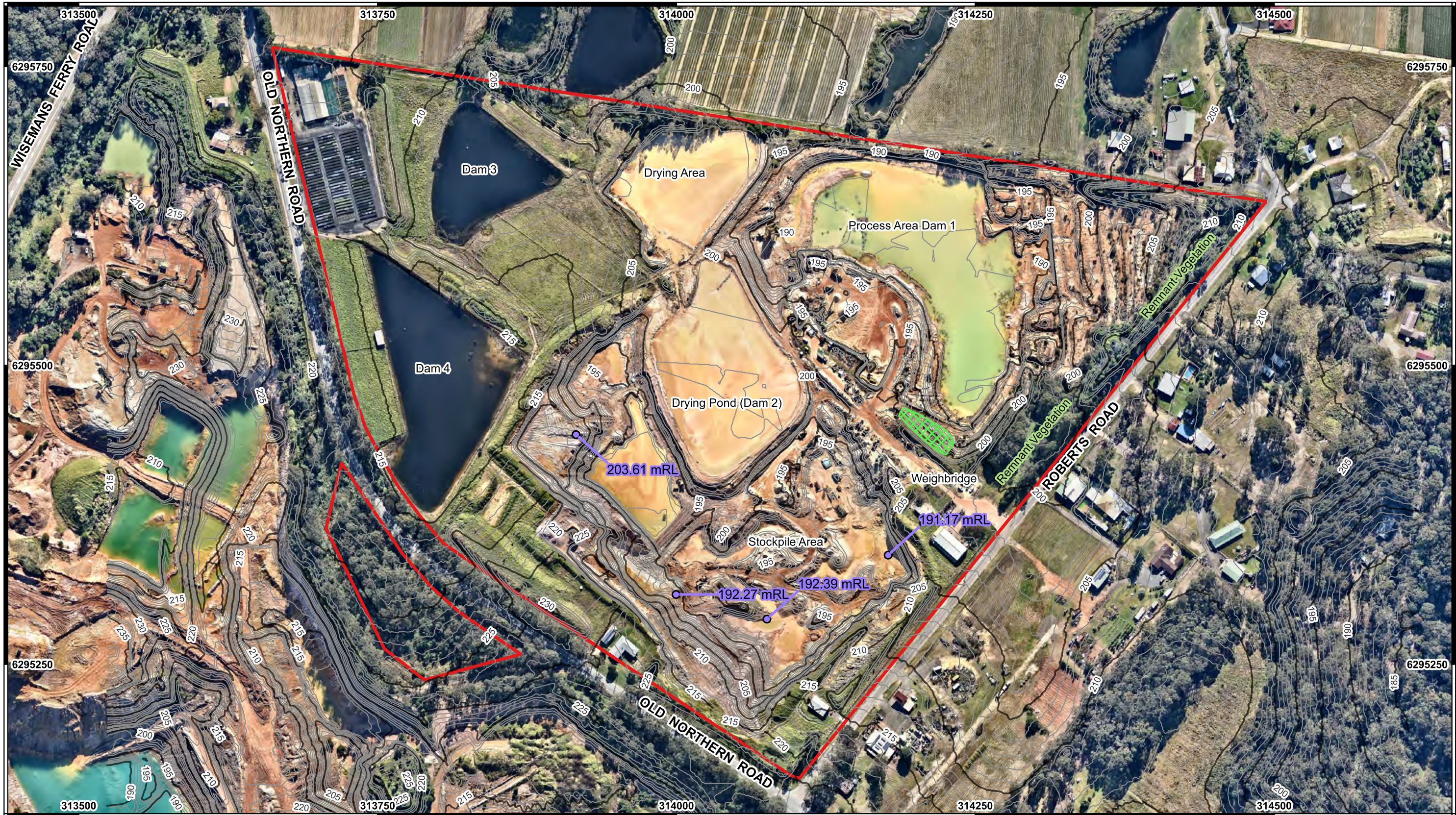
**Contour Interval:** 1m

**Plan By:** SK/JD

**Project Manager:** LT



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
  - Topography 2017/2022
  - Spot Heights 2023
  - 5m
  - 1m
  - VENM/ENM Emplacement

## 5.1 OPERATIONS 2022 CALENDAR YEAR

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

*Table 4. Operational Hours*

Days of the week	Activity	Hours
<b>Monday to Friday</b>	Construction	7.00am to 6.00pm
<b>Monday to Friday</b>	Extraction and processing of material	7.00am to 6.00pm (11 hrs)
<b>Saturdays</b>	Extraction and processing of material	7.00am to 1.00pm (6 hrs)
<b>Monday to Friday</b>	Vehicle loading	6.00am to 6.00pm (12 hrs)
<b>Saturdays.</b>	Vehicle loading	6.00am to 1.00pm (7 hrs)
<b>Sundays &amp; Public Holidays</b>	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 75,000 tonnes of material was sold during the report period, which was lower than 2021, 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. 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. The Extraction Form S1 for the financial year ending June 30 2022 was submitted 24<sup>th</sup> November 2022, see [Appendix E](#).

## 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 5. Traffic and Transport Monitoring Measures*

Aspect	Frequency	Comments
<b>Accurate records of quarry products transported to and from site</b>	Calendar month and annually	Section <a href="#">5.2.2</a>
<b>Accurate records of laden vehicles movements</b>	Per hour, day, week, calendar month and year	Section <a href="#">5.2.2</a>

Aspect	Frequency	Comments
Monitor complaints with respect to Roberts Rd and other haul routes	Continuously	Section <a href="#">5.4</a>
A formal observation of compliance with Drivers Code of Conduct and Covering of Loads	Three monthly	Starting March 2023

## 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. The maximum laden trucks per day was 31 in November 2022, which equates to an average of 2.6 movements per hour. Each truck takes 6-8 minutes to load, therefore no more than 10 laden movements per hour is possible.

Section 94A contributions are paid monthly.

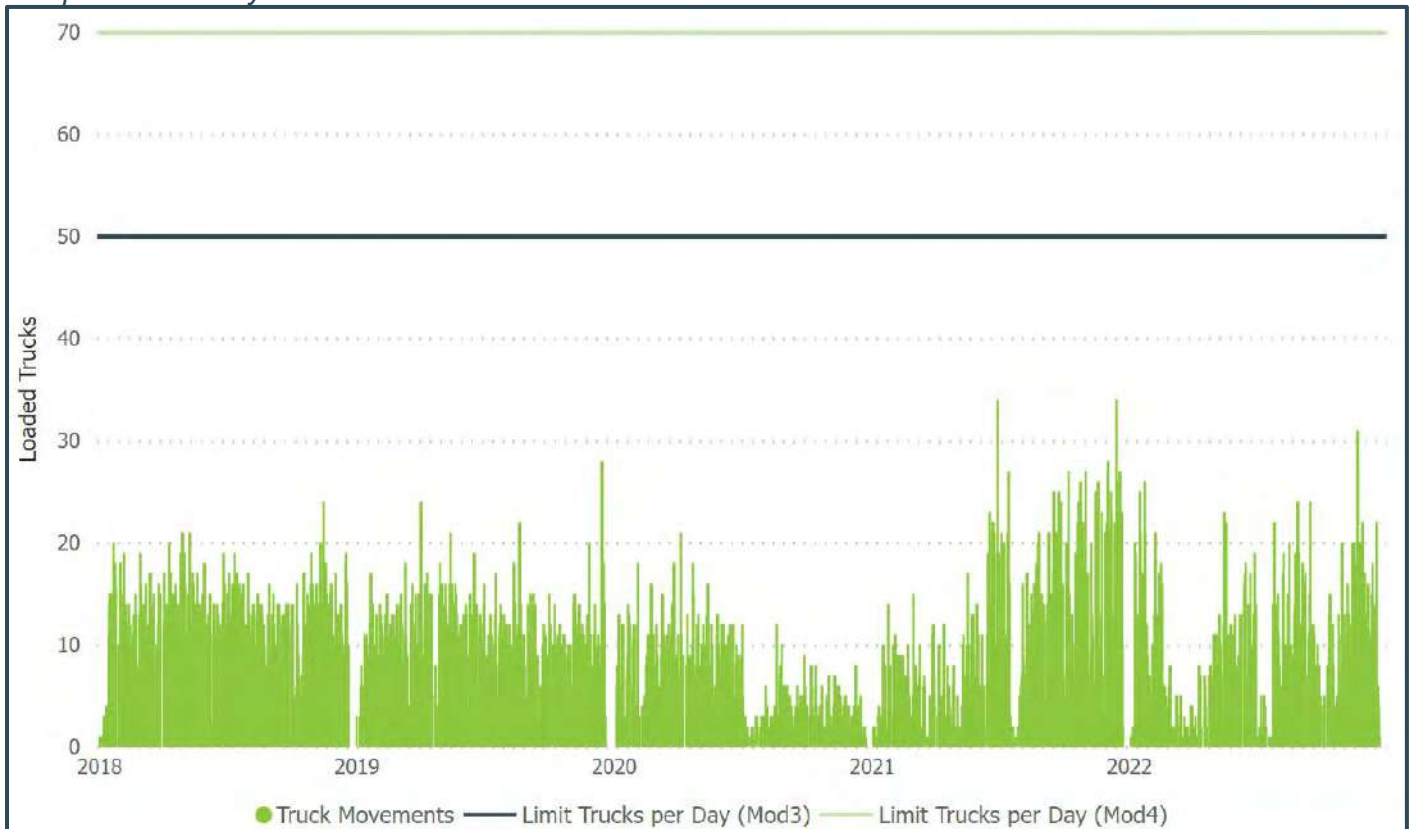
Table 6. Monthly Production 2022

Month	Tonnes	Truck Movements per Month	Max Trucks per Day this Month	Limit Trucks per Day (Mod4)
January	8192	238	26	70
February	6921	198	21	70
March	1277	49	8	70
April	2285	82	8	70
May	7914	254	23	70
June	8215	254	19	70
July	3338	115	22	70
August	8419	270	24	70
September	6894	233	24	70
October	4866	152	20	70
November	10189	317	31	70
December	6545	210	22	70
<b>Total</b>	<b>75054</b>	<b>2372</b>	<b>31</b>	<b>70</b>

Table 7. Annual Production Last 5 Years

Cal Year	Tonnes	Limit T per Cal Year	Truck Movements per Year	Max of Truck Movements per Day	Limit Trucks per Day (Mod4)
2018	123858	480000	3361	24	70
2019	106907	480000	2916	28	70
2020	56894	480000	1638	21	70
2021	95988	480000	2878	34	70
2022	75054	480000	2372	31	70

Graph 2. Daily Production Trends Last 5 Years



### 5.3 MATERIAL IMPORTATION

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.

Table 8. VENM / ENM Importation Tonnes

Calendar Year	Total Tonnes	Consent Limit	Compliant?
2022	7,162	320,000	Yes
<b>Total Imported to Site</b>	<b>7,162</b>	<b>3,000,000</b>	<b>Yes</b>

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. Examples of VENM or ENM certificates covering the imported material are given in [Appendix F](#).

### 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](http://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 G](#).

Regular, informal consultation is undertaken verbally with neighbours.

## 5.5 PROPOSED OPERATIONS 2023 CALENDAR YEAR

Operations are proposed to remain similar in 2023. The active cells are proposed to be phases 3 and 4 as illustrated on [Figure Two](#)

Emplacement of imported material is proposed to continue in the 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.

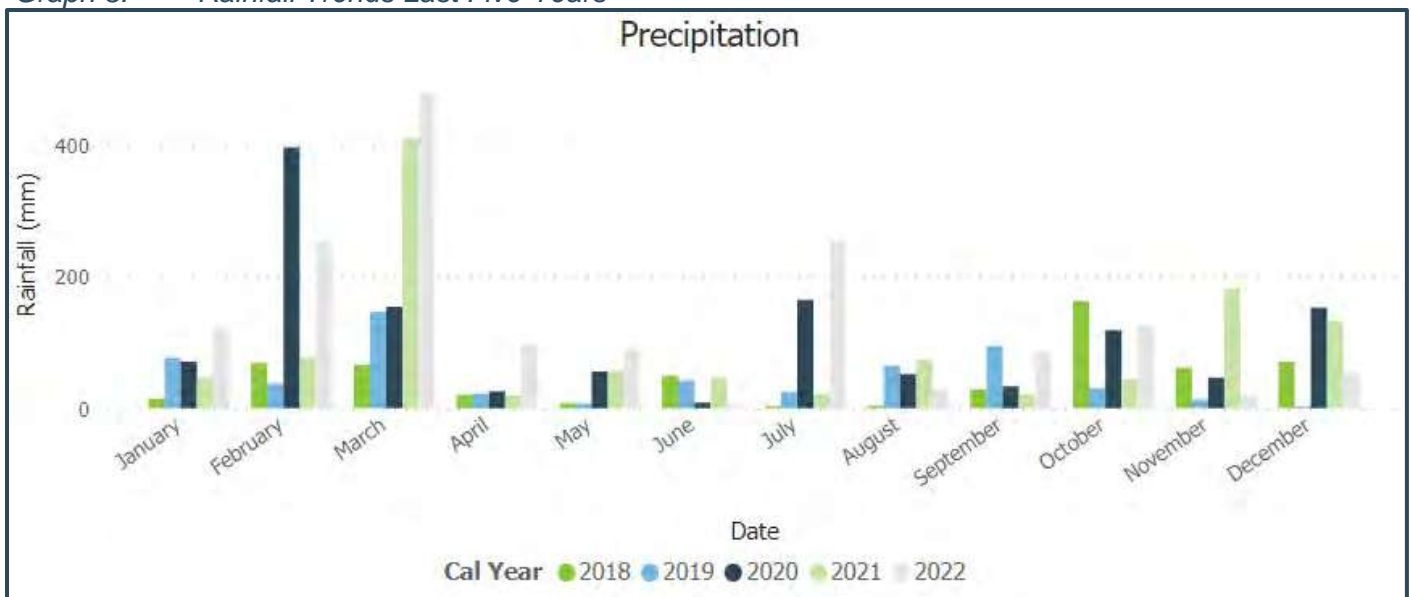
### 6.2 CLIMATE SUMMARY

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.

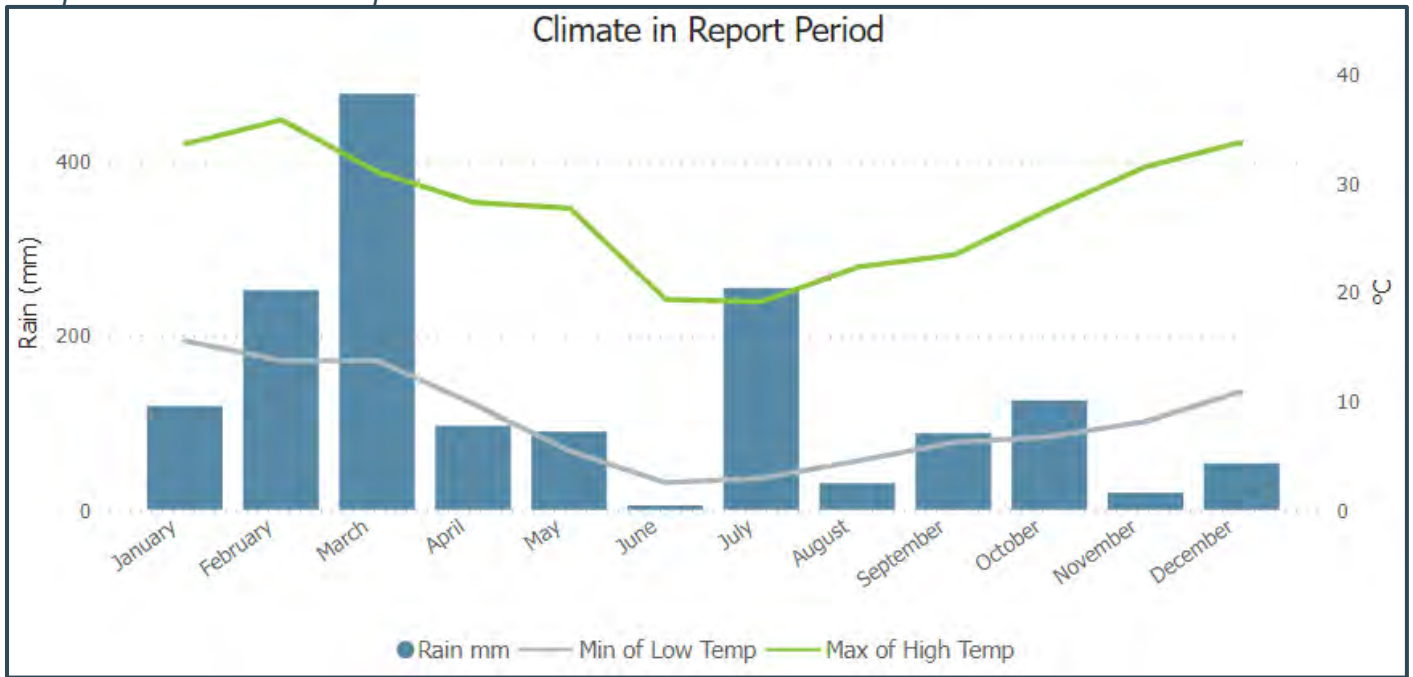
Table 9. Rainfall Summary Last Five Years

Cal Year	Precipitation												Total
	January	February	March	April	May	June	July	August	September	October	November	December	
2018	14.4	69.0	66.2	20.2	7.6	49.2	3.0	3.8	28.6	163.0	61.6	70.4	<b>557.0</b>
2019	76.2	37.2	146.2	22.2	7.4	42.2	24.6	64.8	94.6	30.6	13.0	0.4	<b>559.4</b>
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	<b>1,277.6</b>
2021	45.6	77.2	408.8	19.2	57.0	46.4	22.0	73.4	21.4	43.8	181.8	132.2	<b>1,128.8</b>
2022	119.0	252.0	477.6	96.4	89.8	5.0	254.2	30.4	87.8	125.6	19.6	53.4	<b>1,610.8</b>

Graph 3. Rainfall Trends Last Five Years



Graph 4. Climate in Report Period



Graph 5. 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 <sup>a</sup> Max at Residences	Prediction <sup>b</sup> Max at Residences after 18/08/2021 Mod 4
<b>Total Suspended Particulates (TSP)</b> <b>µg/m<sup>3</sup></b>	Annual	90	57	43
<b>PM<sub>10</sub> µg/m<sup>3</sup></b>	24 hours	50	49	Not predicted
<b>PM<sub>10</sub> µg/m<sup>3</sup></b>	Annual	25	15	22
<b>PM<sub>2.5</sub> µg/m<sup>3</sup></b>	24 hours	25	Not predicted	Not predicted
<b>PM<sub>2.5</sub> µg/m<sup>3</sup></b>	Annual	8	Not predicted	14.0
<b>Insoluble Solids g/m<sup>2</sup>/month</b>	Annual	4	1.7	2.8

Note <sup>a</sup>: 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 <sup>b</sup>: 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

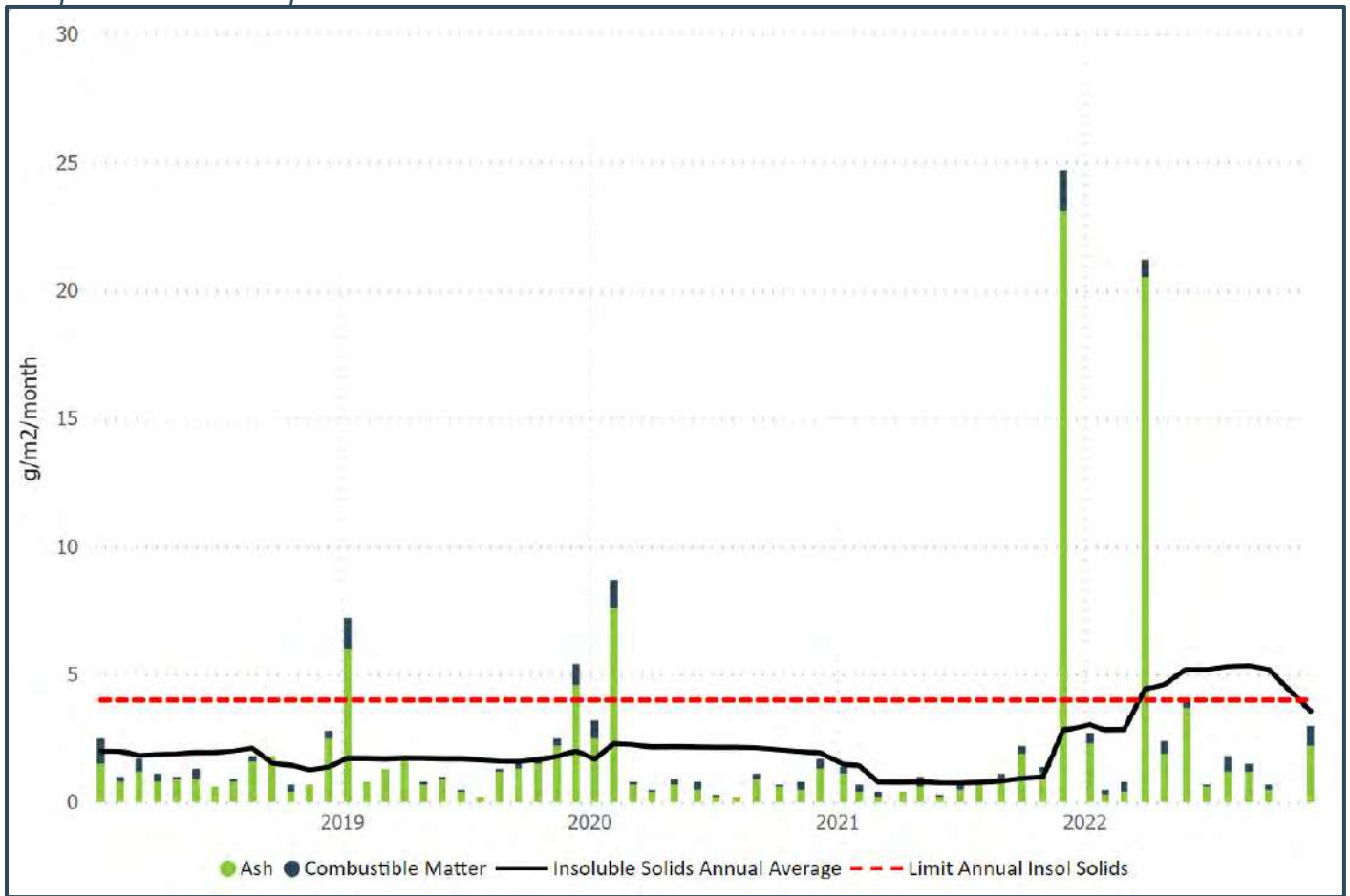
All air quality monitoring results are given in [Appendix I](#) and are summarised below.

Table 11. Dust Deposition Gauge Results

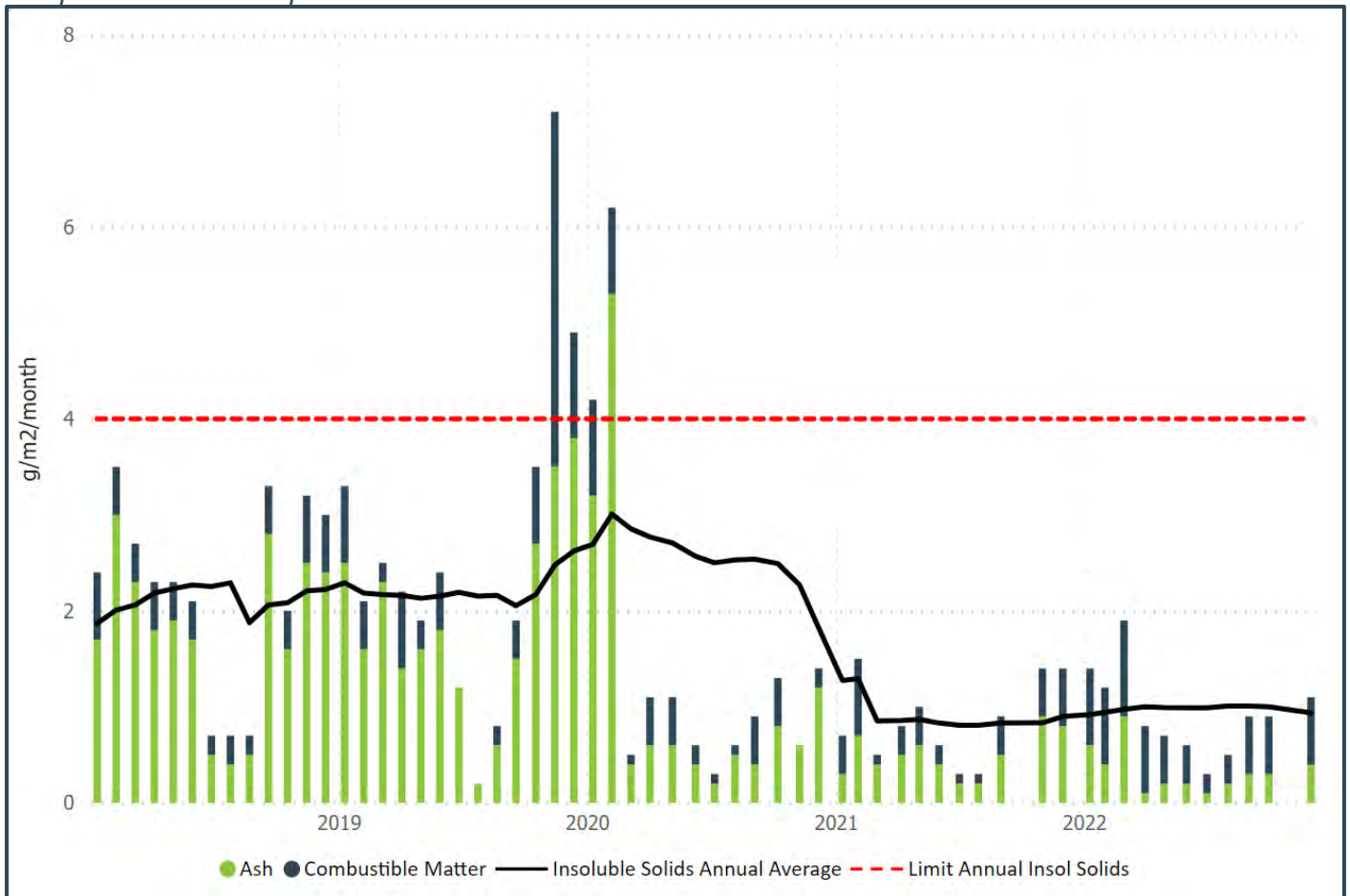
Date Sampled	D1 Gate	D2 North East Corner	D3A Bundwall
10/01/22	2.7	1.4	1.6
1/02/22	0.5	1.2	0.5
1/03/22	0.8	1.9	0.6
1/04/22	21.2	0.8	0.4
29/04/22	2.4	0.7	0.3
1/06/22	4.0	0.6	0.2
1/07/22	0.7	0.3	0.1
1/08/22	1.8	0.5	0.3
1/09/22	1.5	0.9	0.7
30/09/22	0.7	0.9	0.2
1/12/22	3.0	1.1	0.8
<b>Annual Average</b>	<b>3.6</b>	<b>0.9</b>	<b>0.5</b>



Graph 6. Dust Deposition Trends: D1 Gate



Graph 7. Dust Deposition Trends: D2 NE Corner



# Trees encroach on the collection zone of the gauge. These trees are within the protection zone required by the flora management plan and cannot be removed. Trimming of branches is undertaken where possible. The site of this gauge does not meet AS3580.10.1, however an alternative location near the sensitive receptor is not available.

Graph 8. Dust Deposition Trends: D3A Bundwall

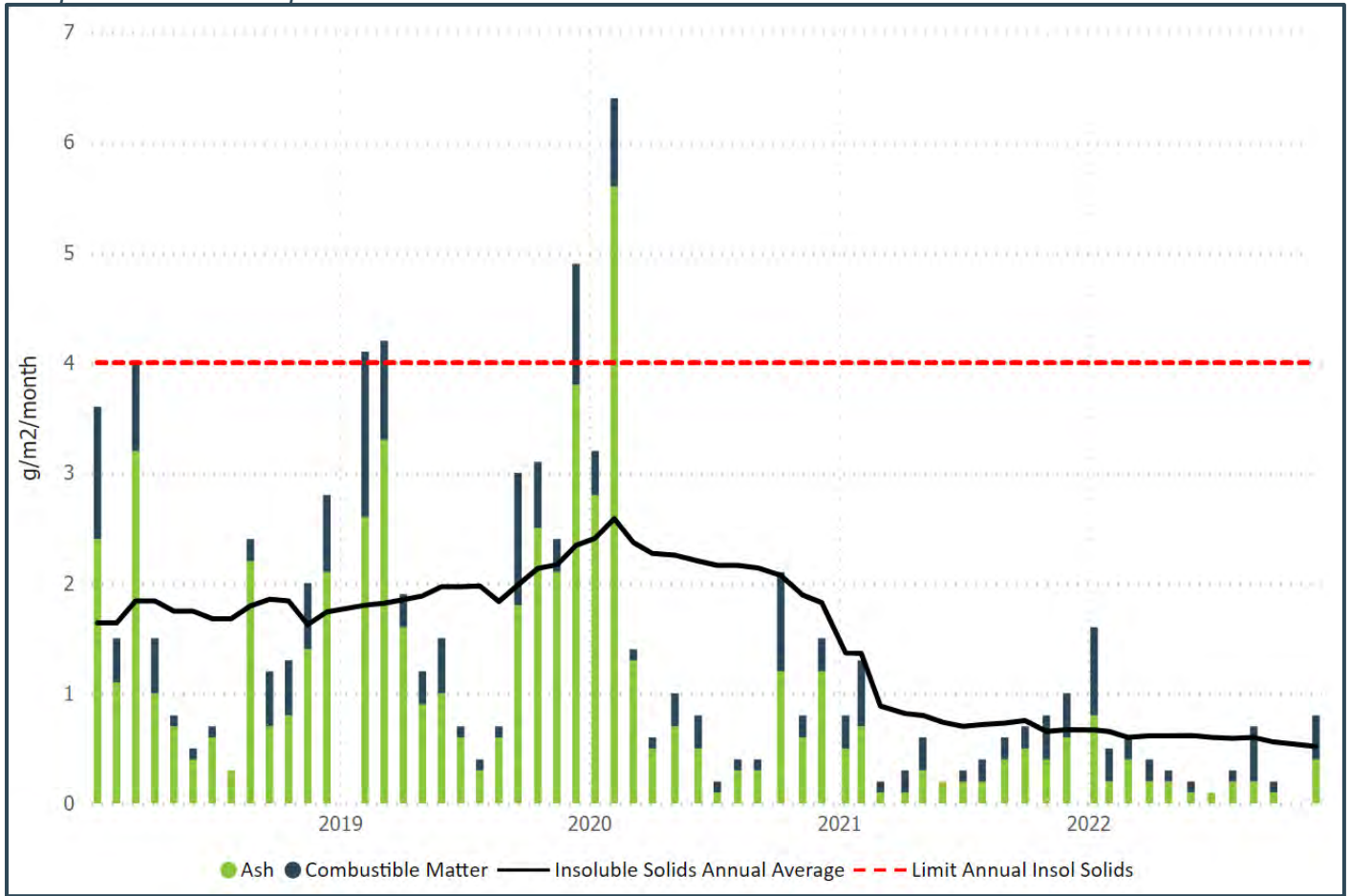


Table 12. Particulate Matter Annual Averages

Annual Averages	TSP $\mu\text{g}/\text{m}^3$	PM10 $\mu\text{g}/\text{m}^3$	PM2.5 $\mu\text{g}/\text{m}^3$
<b>2022</b>	11.0	5.0	2.1
<b>Compliant with DA</b>	Yes	Yes	Yes
<b>Criteria</b>	90	25	8
<b>Prediction</b>	57 (Mod 2)   43 (Mod 4)	15 (Mod 2)   22 (Mod 4)	N/A (Mod 2)   14 (Mod 4)
<b>2021</b>	15.4	8.8	6.1
<b>2020</b>	21	11	7.8
<b>2019</b>	48	32	26
<b>2018</b>	36	19	14
<b>2017</b>	29	15	12

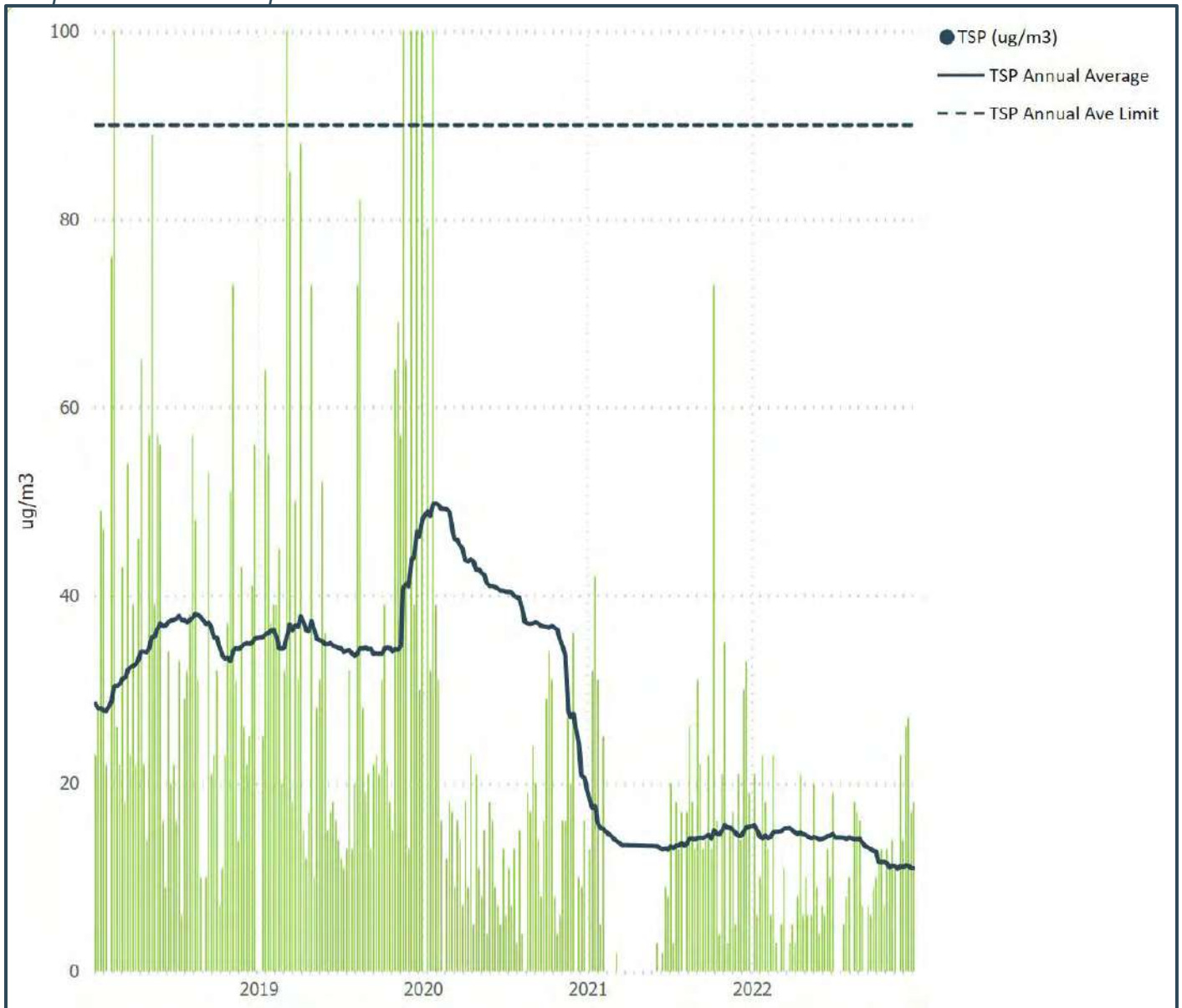
Table 13. Max 24 Hour Particulate Matter Averages

Max 24hr Averages	TSP $\mu\text{g}/\text{m}^3$	PM10 $\mu\text{g}/\text{m}^3$	PM2.5 $\mu\text{g}/\text{m}^3$
<b>2022</b>	27	16	9
<b>Compliant with DA</b>	Yes	Yes	Yes
<b>Criteria (Mod 4)</b>	N/A	50	25

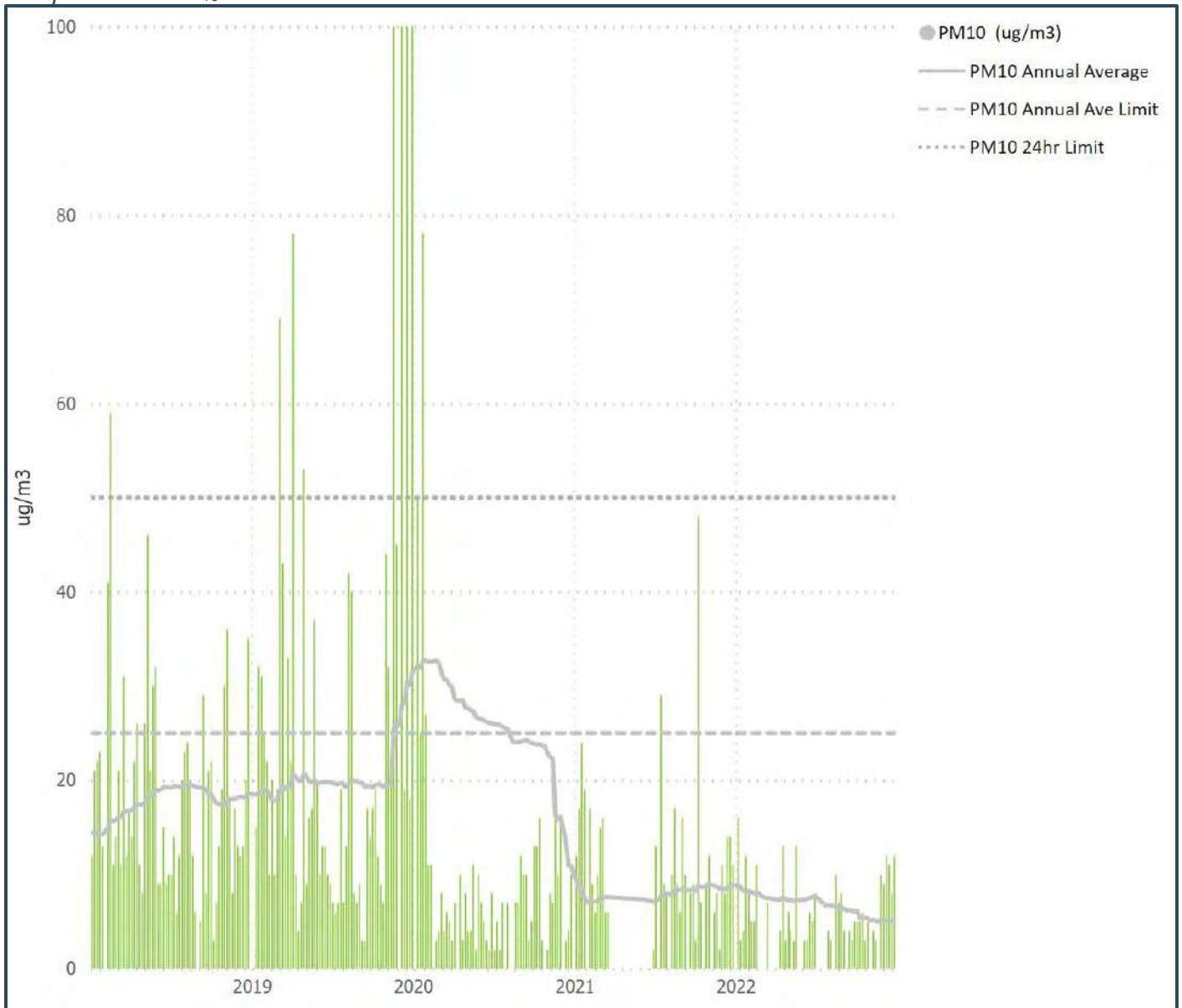
Table 14. 24Hr Exceedances

Date	PM10 $\mu\text{g}/\text{m}^3$	PM2.5 $\mu\text{g}/\text{m}^3$	Comments
	None	None	

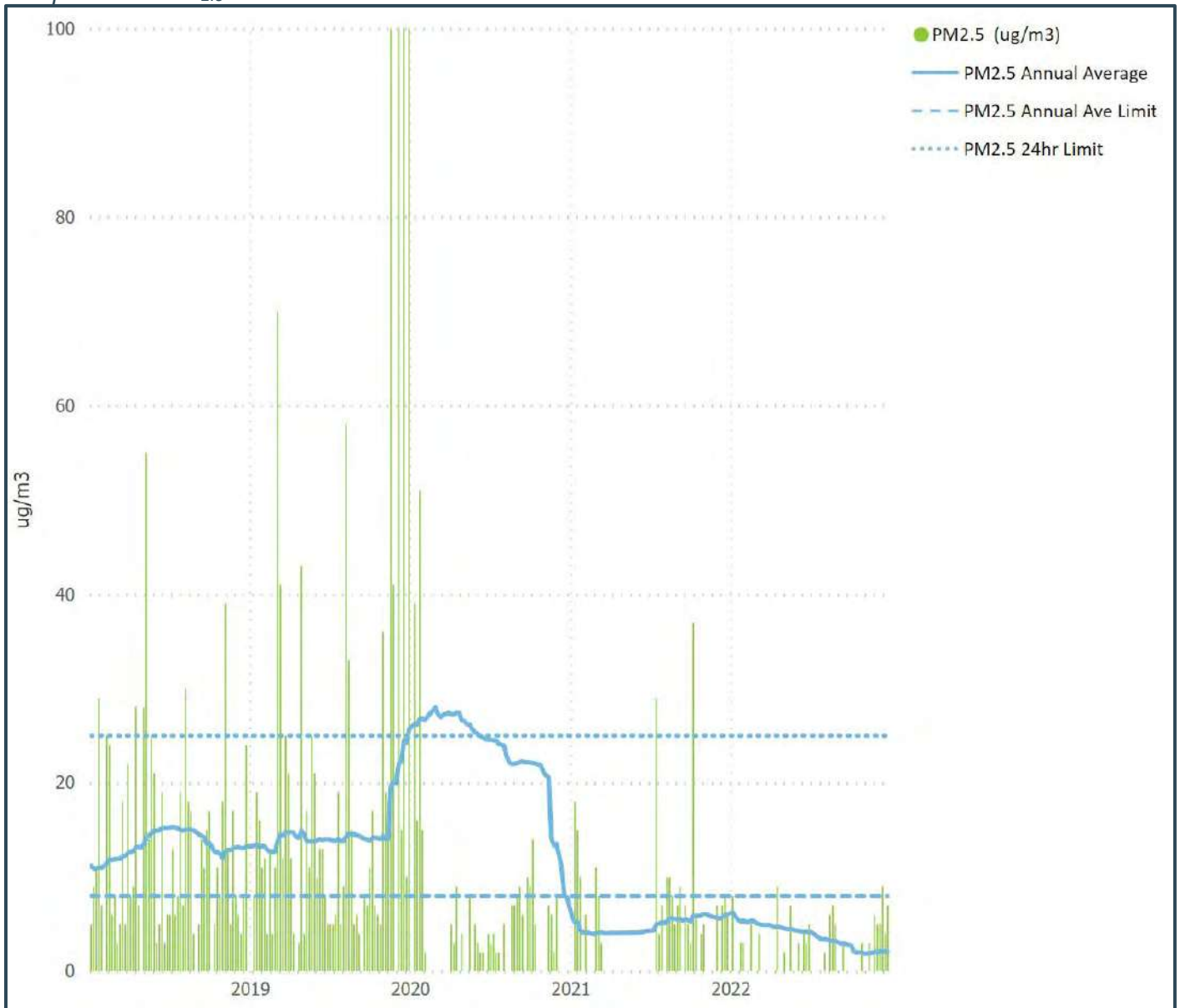
Graph 9. Total Suspended Particulate Trends



Graph 10.  $PM_{10}$  Trends



Graph 11. *PM<sub>2.5</sub> Trends*



### 6.3.3 Interpretation and Effectiveness of Controls

#### 6.3.3.1 Interpretation of Monitoring Results

Total Suspended Particulates (TSP) and PM2.5 and PM10 24-hour and Annual Averages for 2022 were compliant with DA criteria. Dust deposition (Insoluble Solids) exceeded the Annual Average at one of the three locations (D1 Gate between April and November 2022 due to high results in December 2021 and April 2022. This was reported to the DPE on 19<sup>th</sup> April 2022.

All air quality monitoring results show a low stable trend across the past 2 calendar years, except for the 2 high results for Dust Gauge 1 Gate results in December 2021 and March 2022, which are explained in the next section. The consistently low readings following April 2022 have brought the 12-month average back down to compliant at the close of the reporting period.

#### 6.3.3.2 Insoluble Solids Annual Average Exceedance

Hodgson received report number VGT Laboratories Report Number 12665 on 11<sup>th</sup> April 2022, stating that the dust deposition gauge located near the entrance to the Roberts Rd site had an Insoluble Solids level of 21.2 g/m<sup>2</sup>/month for the period ending 1/4/2022. Following this high monthly result, Hodgson requested the laboratory to provide an Annual Average calculation, which was received on the 12<sup>th</sup> April 2022. The Annual Average for the D1 gauge was reported as 4.4 g/m<sup>2</sup>/month for the 12 months ending 1<sup>st</sup> April 2022. An investigation was then undertaken, and a letter of explanation uploaded to the DPE portal on 19<sup>th</sup> April 2022 (see [Appendix P](#)). No further comments or requirements were made by DPE.

A review of diary notations revealed that the following extraordinary works were undertaken.

*Table 15. Dates of Extraordinary Works*

Date	Description	Insoluble Solids (g/m <sup>2</sup> /month)
<b>November 2021</b>	Bund wall pushed up adjacent to gauge to slow water runoff during excessive rainfall events. Heavy equipment was used to assist with waste management activities.	24.7
<b>March 2022</b>	The area around the gauge was slashed twice during the month due to warm, wet weather producing good growing conditions	21.2

The second high result in 12 months pushed the Annual Average higher than the required 4 g/m<sup>2</sup>/month, and it did not decrease below the limit until November 2022 when the first high result was no longer included in the Annual Average calculation.

Waste management and weed management activities were undertaken at the request of the Department of Planning and Environment, and not undertaking these activities would have put the site in breach of other site conditions. No further earth works were undertaken in the area around the gauge, and weed management activities were reduced to once per month to minimise impact on air quality.

#### 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 16. Effectiveness of Air Quality Management Controls

Control	Interpretation	Effective?
<b>Increase use of water-cart in dry weather</b>	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
<b>Delaying non-essential earth-moving activities during periods of high wind</b>	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
<b>Reducing truck speeds</b>	Dust results do not increase with truck movements	Yes
<b>Damping down</b>	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
<b>Installation of a mobile sprinkler in 2019</b>	Sprinklers are installed. Dust results do not increase on high wind days. Examination of wind direction during monitoring shows sources are off site.	Yes
<b>Trucks covered when entering and leaving the site</b>	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 2022 calendar year and will be maintained during 2023. 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 is recommended by the Air Quality Monitoring Review and will be undertaken in 2023.

#### 6.3.4.1 Air Quality Monitoring 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.
  - 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 [Appendix J](#)), and training will be undertaken during 2023.

## 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 22<sup>nd</sup> 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 2<sup>nd</sup> 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 is monitored in the Process Dam using an automated logger that is downloaded monthly. 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 17. 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
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
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

Parameter	Source	Compliance	Comments
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 <a href="#">6.4.2</a>
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 2022 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 2. 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.

Table 18. Surface Water Quality Results Dam 1 – Process

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
Dam 1 - Process	6/1/2022	4.5	145	91	49	4	1.0	2.0	14	2.0
Dam 1 - Process	29/4/2022	5.4	89		22	3	0.9	1.0	11	1.0
Dam 1 - Process	21/7/2022	6.2	65		12	3	1.0	1.0	6	2.0
Dam 1 - Process	13/10/2022	6.1	93		19	3	1.0	2.0	10	2.0

Sample	Cal Year	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	2018	4.6	179	112	43	3	0.7	2.6	22	3.2
Dam 1 - Process	2019	4.5	151	94	33	3	0.1	2.1	16	2.8
Dam 1 - Process	2020	4.3	258	161	55	16	0.8	4.2	27	3.5
Dam 1 - Process	2021	4.5	183	115	39	4	0.9	3.5	18	3.0
Dam 1 - Process	2022	5.6	98	91	26	3	1.0	1.5	10	1.8

Sample	Cal Year	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	2018	4.4	100	63	23	2	0.6	1.1	11	2.0
Dam 1 - Process	2019	4.4	127	79	26	2	0.0	1.6	11	1.8
Dam 1 - Process	2020	4.0	126	79	26	3	0.6	2.0	12	2.5
Dam 1 - Process	2021	4.2	140	88	31	2	0.7	2.2	14	1.5
Dam 1 - Process	2022	4.5	65	91	12	3	0.9	1.0	6	1.0

Sample	Cal Year	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	2018	4.9	229	143	57	4	0.8	3.7	29	4.3
Dam 1 - Process	2019	4.6	167	104	41	3	0.5	3.2	19	4.3
Dam 1 - Process	2020	4.4	479	299	100	29	1.0	6.2	45	5.9
Dam 1 - Process	2021	4.7	251	157	52	5	1.1	5.4	23	5.0
Dam 1 - Process	2022	6.2	145	91	49	4	1.0	2.0	14	2.0

Table 19. Surface Water Quality Results Dam 2 – Tailings

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
Dam 2 - Tailings	6/1/2022	4.4	125	78	44	7	1.0	2.0	11	2.0
Dam 2 - Tailings	29/4/2022	4.7	119		31	3	1.0	2.0	13	1.0
Dam 2 - Tailings	13/10/2022	4.7	48		8	2	0.5	0.7	5	0.7

Sample	Cal Year	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	2018	4.5	208	130	43	5	0.7	2.6	22	3.2
Dam 2 - Tailings	2019	4.5	155	97	33	2	0.0	2.0	17	2.9
Dam 2 - Tailings	2020	4.3	300	188	62	22	1.1	4.8	30	4.0
Dam 2 - Tailings	2021	4.3	153	96	33	5	0.5	3.0	15	2.5
Dam 2 - Tailings	2022	4.6	97	78	28	4	0.8	1.6	10	1.2

Sample	Cal Year	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	2018	4.3	112	70	24	2	0.5	1.2	12	2.1
Dam 2 - Tailings	2019	4.4	119	74	27	0	0.0	1.3	11	1.6
Dam 2 - Tailings	2020	4.0	112	70	23	3	0.6	2.0	11	2.3
Dam 2 - Tailings	2021	4.2	123	77	25	2	0.0	1.7	13	1.7
Dam 2 - Tailings	2022	4.4	48	78	8	2	0.5	0.7	5	0.7

Sample	Cal Year	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	2018	4.7	254	159	57	8	0.9	3.7	30	4.1
Dam 2 - Tailings	2019	4.5	169	106	41	3	0.0	3.1	19	4.3
Dam 2 - Tailings	2020	4.5	523	327	100	47	1.6	6.7	46	6.3
Dam 2 - Tailings	2021	4.4	202	126	44	8	1.0	5.0	19	4.0
Dam 2 - Tailings	2022	4.7	125	78	44	7	1.0	2.0	13	2.0

\*Dam was dry on 21/7/2022

Table 20. Surface Water Quality Results Dam 3 – Nursery

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
Dam 3 - Nursery	6/1/2022	7.4	162	101	36	17	5.6	4.0	11	3.0
Dam 3 - Nursery	29/4/2022	7.1	132		13	4	5.0	3.0	7	6.2
Dam 3 - Nursery	21/7/2022	6.9	106		9	8	6.0	3.0	6	5.0
Dam 3 - Nursery	13/10/2022	7.2	109		9	8	6.2	3.0	6	3.0

Sample	Cal Year	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	2018	7.3	189	118	34	17	4.7	4.8	17	5.5
Dam 3 - Nursery	2019	7.5	188	117	32	14	4.5	4.2	16	5.1
Dam 3 - Nursery	2020	7.7	186	116	26	15	5.5	4.5	14	6.3
Dam 3 - Nursery	2021	7.8	157	98	23	14	6.3	4.9	12	4.1
Dam 3 - Nursery	2022	7.2	127	101	17	9	5.7	3.3	7	4.3

Sample	Cal Year	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	2018	7.0	165	103	32	11	4.2	4.1	16	5.1
Dam 3 - Nursery	2019	6.9	156	97	28	13	4.0	3.5	15	4.2
Dam 3 - Nursery	2020	6.9	167	104	21	5	5.3	4.2	12	5.0
Dam 3 - Nursery	2021	6.9	148	92	21	10	5.1	4.1	11	3.0
Dam 3 - Nursery	2022	6.9	106	101	9	4	5.0	3.0	6	3.0

Sample	Cal Year	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	2018	7.8	223	139	36	21	5.3	5.3	17	6.0
Dam 3 - Nursery	2019	7.8	214	134	35	16	5.2	4.6	17	5.9
Dam 3 - Nursery	2020	9.1	237	148	35	23	5.6	4.9	18	8.1
Dam 3 - Nursery	2021	8.9	165	103	25	17	7.4	5.8	13	5.6
Dam 3 - Nursery	2022	7.4	162	101	36	17	6.2	4.0	11	6.2

Table 21. Surface Water Quality Results Dam 4 - Farm

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
Dam 4 - Farm	6/1/2022	6.7	115	72	26	4	2.0	2.0	11	1.0
Dam 4 - Farm	29/4/2022	6.8	90		13	3	1.0	1.0	8	4.0
Dam 4 - Farm	21/7/2022	6.8	70		8	3	2.0	2.0	5	3.0
Dam 4 - Farm	13/10/2022	6.7	64		8	3	2.0	2.0	5	2.0

Sample	Cal Year	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	2018	7.9	158	99	29	8	2.3	3.8	16	2.7
Dam 4 - Farm	2019	8.4	138	86	26	7	2.6	3.4	14	3.0
Dam 4 - Farm	2020	7.7	136	85	22	4	2.0	3.0	13	2.9
Dam 4 - Farm	2021	6.7	113	71	24	4	1.9	2.6	12	1.9
Dam 4 - Farm	2022	6.8	85	72	14	3	1.8	1.8	7	2.5

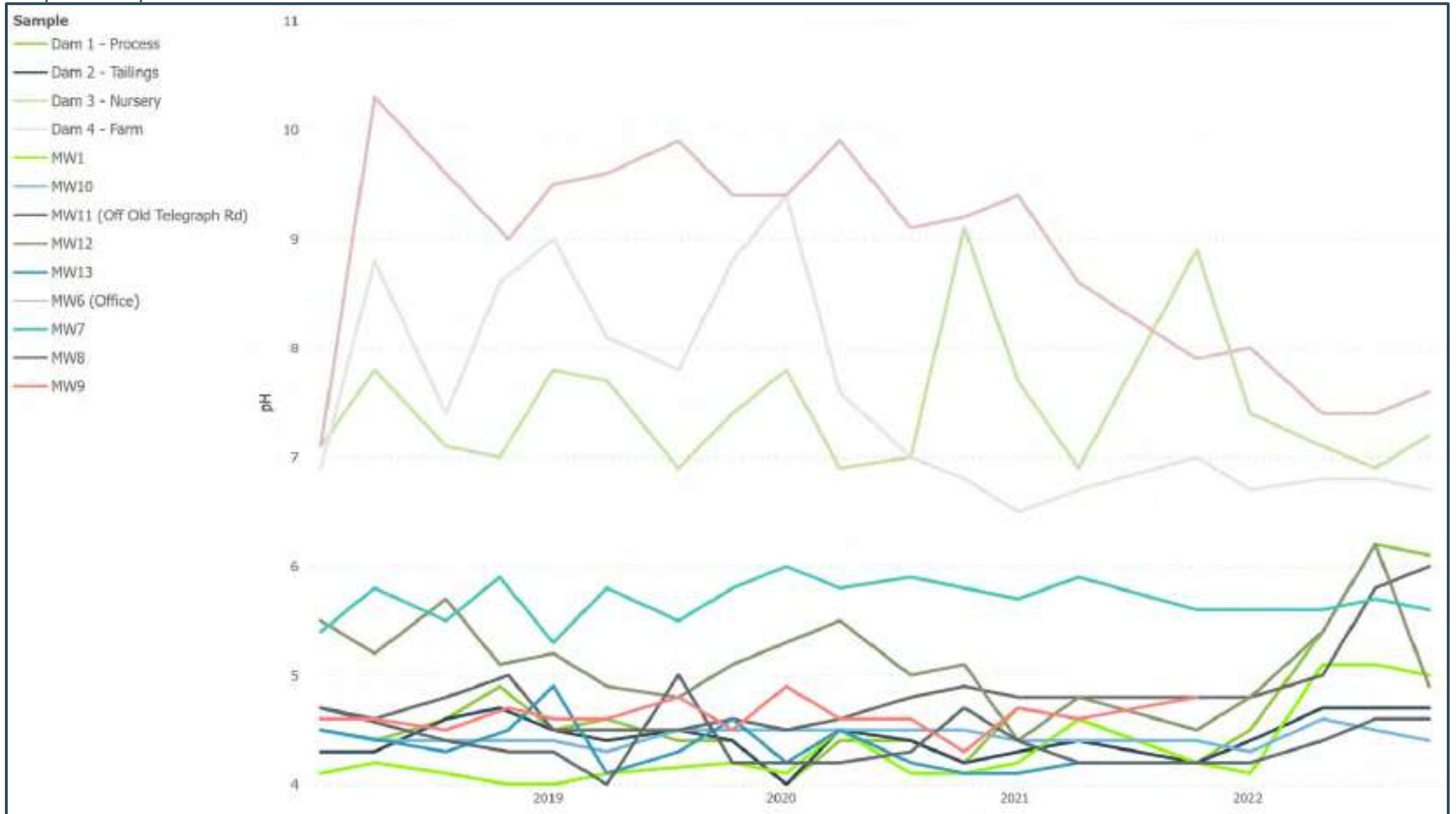
Sample	Cal Year	Min of pH	Min of Electrical Conductivity	Min of Total Dissolved Solids	Min of Chloride	Min of Sulphate	Min of Calcium	Min of Magnesium	Min of Sodium	Min of Potassium
Dam 4 - Farm	2018	6.9	138	86	26	7	1.9	2.9	14	2.4
Dam 4 - Farm	2019	7.8	117	73	18	3	1.8	2.7	11	2.1
Dam 4 - Farm	2020	6.8	113	70	17	3	1.6	2.6	10	1.7
Dam 4 - Farm	2021	6.5	101	63	22	4	1.4	2.4	10	1.0
Dam 4 - Farm	2022	6.7	64	72	8	3	1.0	1.0	5	1.0

Sample	Cal Year	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	2018	8.8	188	117	32	8	2.8	4.4	18	3.0
Dam 4 - Farm	2019	9.0	172	107	29	13	4.0	4.3	17	4.2
Dam 4 - Farm	2020	9.4	192	120	30	5	2.8	3.8	17	3.6
Dam 4 - Farm	2021	7.0	126	79	28	5	2.2	3.0	13	3.1
Dam 4 - Farm	2022	6.8	115	72	26	4	2.0	2.0	11	4.0

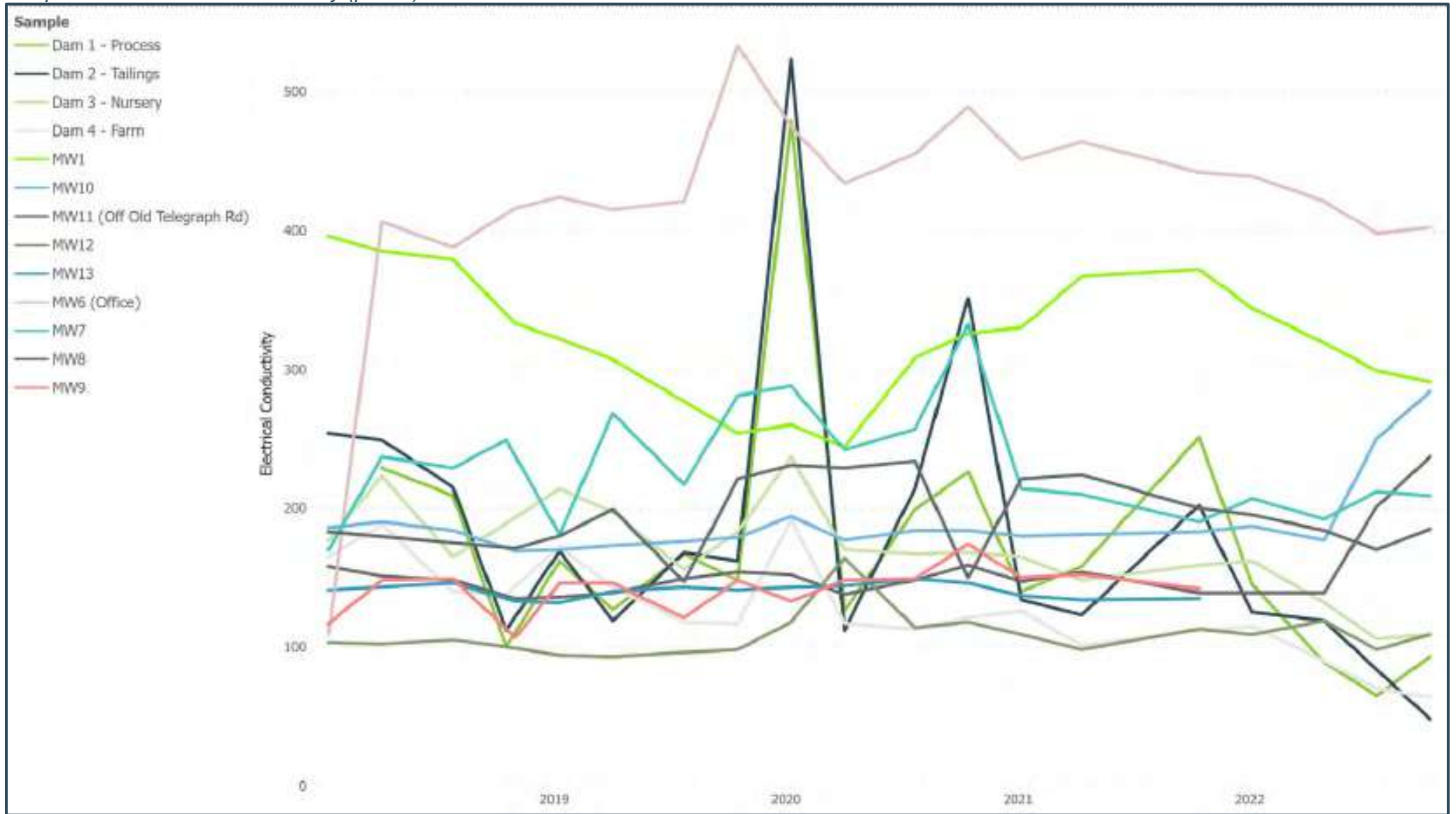


6.4.2.2 Water Quality Trends

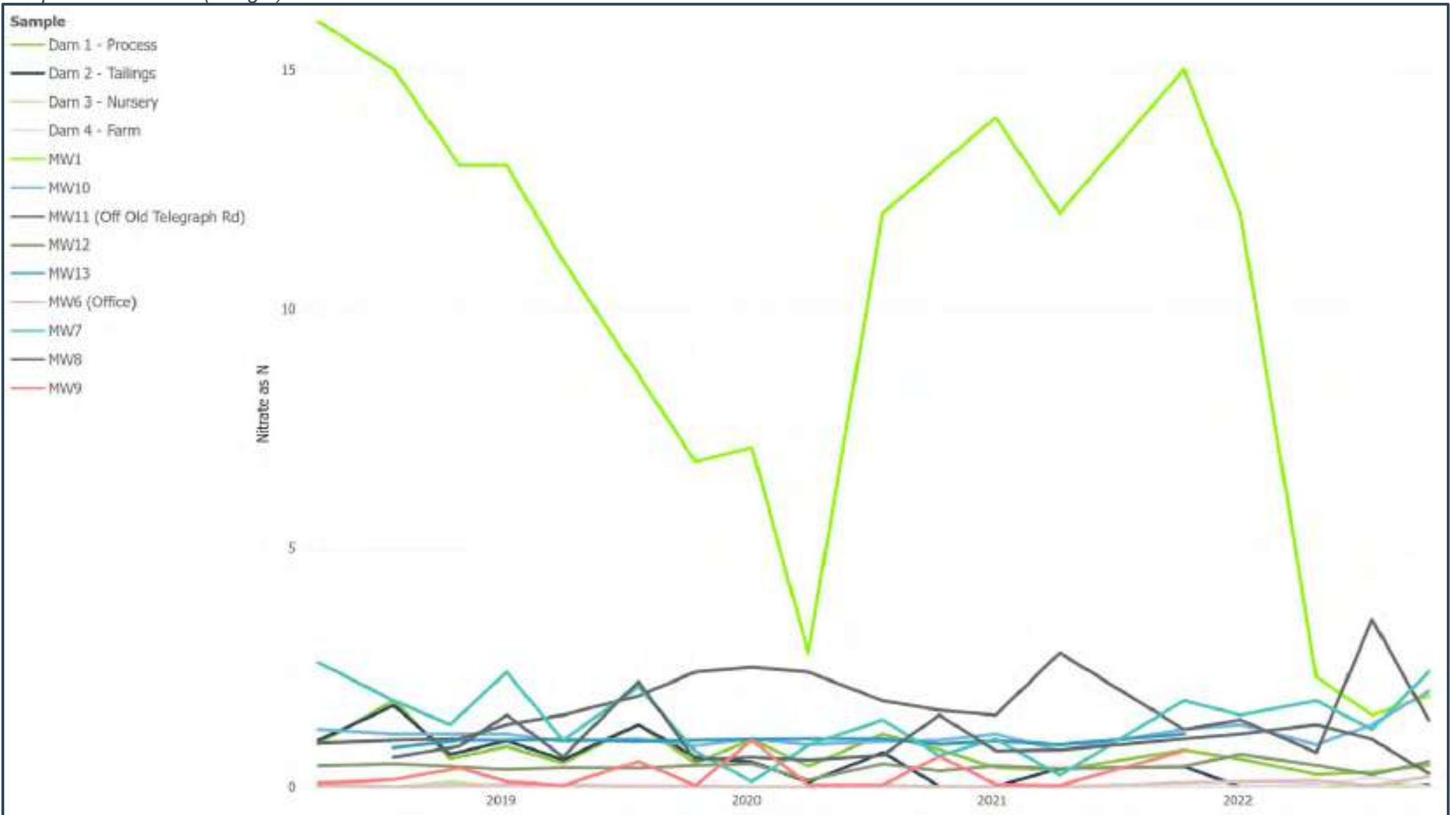
Graph 12. pH Trends



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



Graph 14. Nitrate (N mg/L) Trends



### 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 delivered to the designated drying areas and liberated water is drained into a holding dam (currently Drying Dam 2) to settle sediment entrained in the process. Water from the holding dam is then released back into the process dam (Dam 1) for re-use. Release from Dam 2 to Dam 1 is through a riser pipe that can be manually adjusted to maximise the water draining to Dam 1. During processing Dam 2 fills with sediment as well as water resulting in the upward displacement of water in the dam. The overall effect is that whilst a nominal small volume is held at all times in Dam 2, virtually all processing water makes its way back to Dam 1 overnight.

### 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 with 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 22](#).

*Table 22. Groundwater Monitoring Bores*

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

<b>MW11</b>	Maroota Sands downgradient	In use for water sampling	Installed December 2016
<b>MW12</b>	Hawkesbury Sandstone	In use for water sampling	Installed December 2016
<b>MW13</b>	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 K](#). PT84PB2 is owned and operated by the landowner; the quarry operators have no use or access.

*Table 23. Groundwater Level Monitoring*

Parameter	Criteria	Units	Source
<b>Groundwater Level</b>	Monitored continuously	Metres AHD	Consent sched 2 cond 43
<b>Depth of Extraction</b>	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

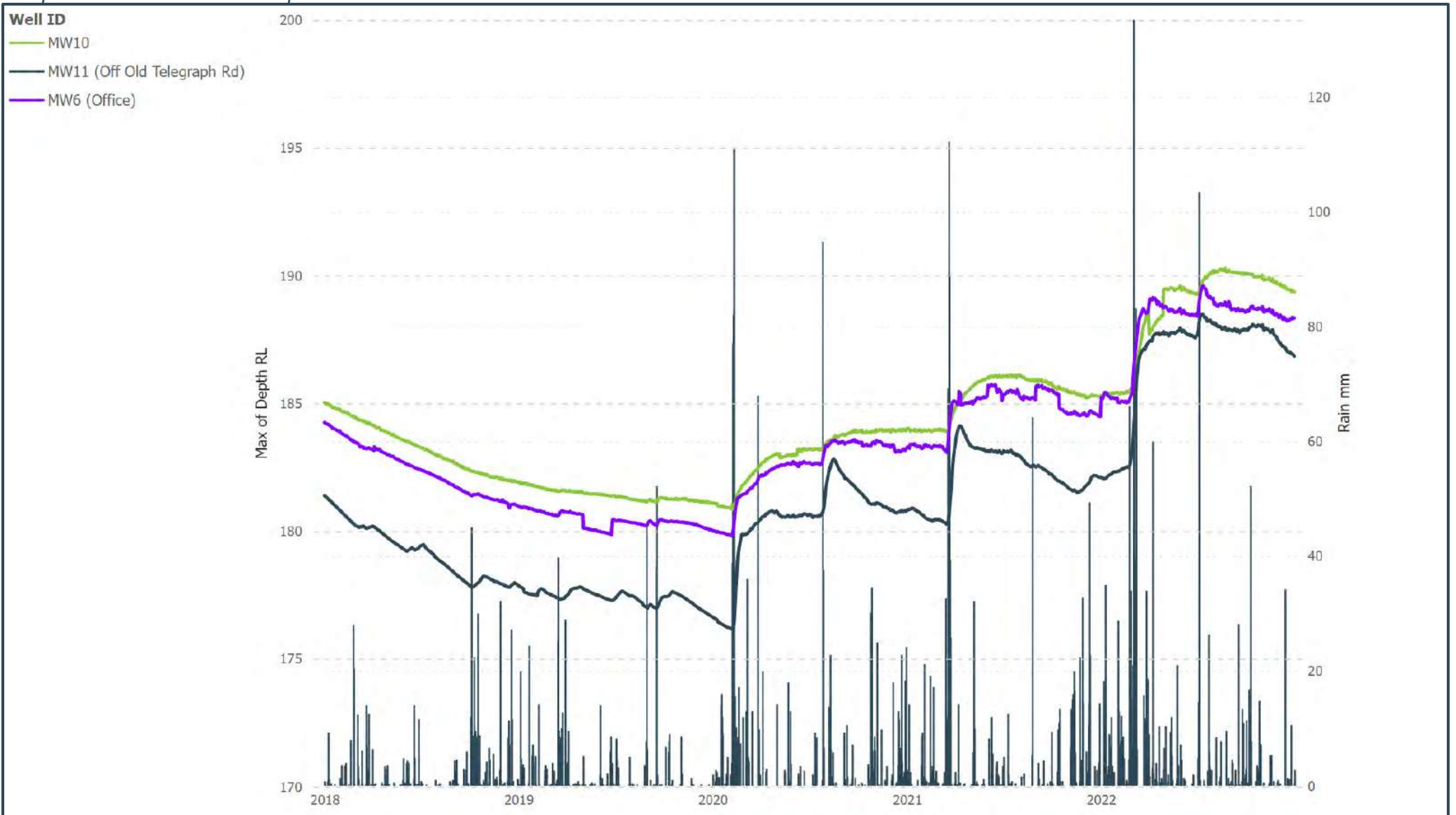
Groundwater level monitoring results from the continuous automatic data loggers are corrected for barometric pressure and calibrated to manual measurements undertaken each month. Groundwater levels are currently monitored in seven boreholes located on the site. MW1 logger was installed prior to 2015; 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.

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 – Maroota Sands



Graph 16. Groundwater Depth Trends – Hawkesbury Sandstone

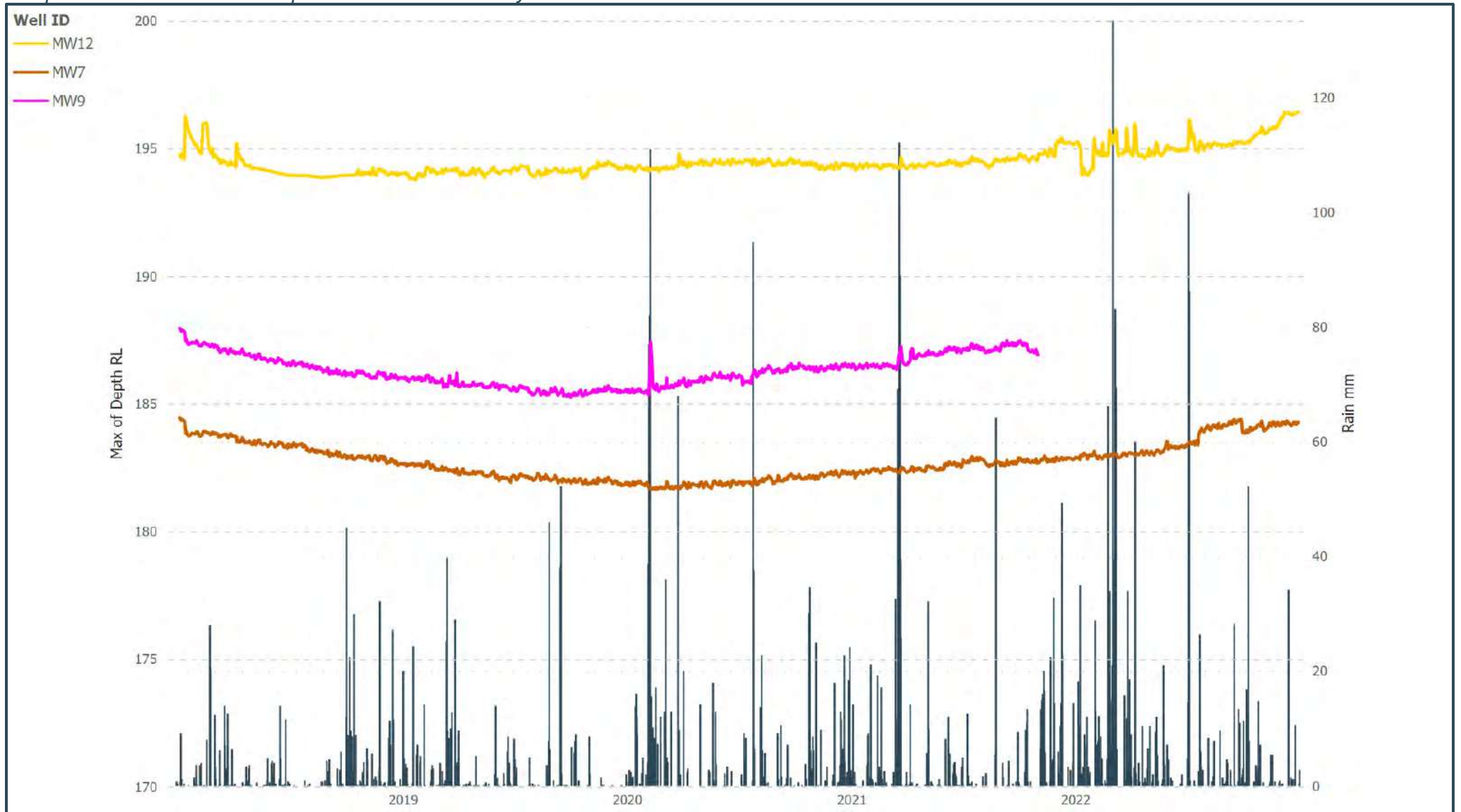


Table 24. Groundwater Quality Results – MW1

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
MW1	6/1/2022	4.1	344	215	58	39	5.0	13.0	20	3.0
MW1	29/4/2022	5.1	319		77	18	4.0	7.8	26	3.0
MW1	21/7/2022	5.1	299		66	23	4.0	8.3	27	2.0
MW1	13/10/2022	5.0	291		62	23	4.0	7.9	27	2.0

Sample	Cal Year	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	2018	4.1	373	233	61	25	5.6	16.3	19	3.6
MW1	2019	4.1	294	184	47	6	3.4	11.7	17	3.8
MW1	2020	4.2	285	178	45	33	4.1	10.7	19	3.3
MW1	2021	4.3	356	222	52	8	5.8	15.7	23	3.4
MW1	2022	4.8	313	215	66	26	4.3	9.3	25	2.5

Sample	Cal Year	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	2018	4.0	333	208	57	5	4.5	14.0	16	3.4
MW1	2019	4.0	254	159	41	4	2.9	10.0	15	3.4
MW1	2020	4.1	244	152	41	9	3.5	7.9	18	2.3
MW1	2021	4.2	330	206	48	6	4.9	13.0	20	2.8
MW1	2022	4.1	291	215	58	18	4.0	7.8	20	2.0

Sample	Cal Year	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	2018	4.2	396	247	63	61	7.0	18.0	24	3.9
MW1	2019	4.2	322	201	51	8	3.6	13.0	19	4.5
MW1	2020	4.5	326	204	47	64	4.5	13.0	20	4.7
MW1	2021	4.6	372	232	56	9	6.6	17.0	27	4.0
MW1	2022	5.1	344	215	77	39	5.0	13.0	27	3.0



Table 25. Groundwater Quality Results – MW6

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
MW6 (Office)	6/1/2022	8.0	439	274	120	4	3.0	2.0	66	3.0
MW6 (Office)	29/4/2022	7.4	421		94	0	5.0	4.0	64	2.0
MW6 (Office)	21/7/2022	7.4	398		82	0	9.0	8.0	40	2.0
MW6 (Office)	13/10/2022	7.6	402		81	1	8.6	7.0	47	2.0

Sample	Cal Year	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)	2018	9.0	330	206	66	10	0.8	0.3	78	1.2
MW6 (Office)	2019	9.6	448	280	83	3	0.5	0.0	82	1.1
MW6 (Office)	2020	9.4	463	290	95	4	0.9	0.2	77	1.2
MW6 (Office)	2021	8.6	452	283	91	0	4.0	1.8	73	2.1
MW6 (Office)	2022	7.6	415	274	94	1	6.4	5.3	54	2.3

Sample	Cal Year	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)	2018	7.1	110	69	49	2	0.0	0.0	71	1.2
MW6 (Office)	2019	9.4	415	259	75	1	0.0	0.0	59	0.9
MW6 (Office)	2020	9.1	434	271	89	2	0.0	0.0	69	1.0
MW6 (Office)	2021	7.9	442	276	85	0	1.2	0.0	70	1.4
MW6 (Office)	2022	7.4	398	274	81	0	3.0	2.0	40	2.0

Sample	Cal Year	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)	2018	10.3	416	260	84	21	1.6	0.8	84	1.3
MW6 (Office)	2019	9.9	533	333	88	5	0.7	0.0	110	1.2
MW6 (Office)	2020	9.9	489	306	99	6	1.2	0.7	84	1.4
MW6 (Office)	2021	9.4	464	290	94	1	6.3	3.0	76	2.8
MW6 (Office)	2022	8.0	439	274	120	4	9.0	8.0	66	3.0

Table 26. Groundwater Quality Results – MW7

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
MW7	6/1/2022	5.6	207	129	52	9	0.0	0.0	28	0.6
MW7	29/4/2022	5.6	192		35	8	0.0	0.0	28	0.0
MW7	21/7/2022	5.7	212		32	9	0.7	0.0	34	0.5
MW7	13/10/2022	5.6	209		33	6	1.0	1.0	30	0.5

Sample	Cal Year	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	2018	5.7	221	138	31	21	0.0	0.0	47	0.0
MW7	2019	5.6	237	148	33	21	0.0	0.0	46	0.2
MW7	2020	5.9	280	175	43	19	0.5	0.0	51	0.4
MW7	2021	5.7	205	128	30	7	0.0	0.0	36	0.2
MW7	2022	5.6	205	129	38	8	0.4	0.3	30	0.4

Sample	Cal Year	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	2018	5.4	170	106	30	18	0.0	0.0	40	0.0
MW7	2019	5.3	181	113	28	17	0.0	0.0	27	0.0
MW7	2020	5.8	242	151	30	17	0.0	0.0	43	0.0
MW7	2021	5.6	190	119	28	5	0.0	0.0	28	0.0
MW7	2022	5.6	192	129	32	6	0.0	0.0	28	0.0

Sample	Cal Year	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	2018	5.9	249	156	34	23	0.0	0.0	52	0.0
MW7	2019	5.8	281	176	45	24	0.0	0.0	62	0.6
MW7	2020	6.0	332	207	77	20	1.8	0.0	65	0.9
MW7	2021	5.9	214	134	32	11	0.0	0.0	42	0.6
MW7	2022	5.7	212	129	52	9	1.0	1.0	34	0.6

Table 27. Groundwater Quality Results – MW8

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
MW8	6/1/2022	4.2	195	122	61	4	0.0	2.0	20	0.0
MW8	29/4/2022	4.4	184		47	4	0.9	3.0	20	0.0
MW8	21/7/2022	4.6	170		39	2	2.0	3.0	18	0.0
MW8	13/10/2022	4.6	185		42	3	1.0	2.0	22	0.7

Sample	Cal Year	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	2018	4.5	176	110	48	4	0.4	2.9	18	0.0
MW8	2019	4.4	187	117	39	2	1.0	2.0	23	0.0
MW8	2020	4.4	211	132	48	22	1.1	3.1	23	0.0
MW8	2021	4.3	215	134	47	1	0.5	3.3	23	0.0
MW8	2022	4.5	184	122	47	3	1.0	2.5	20	0.2

Sample	Cal Year	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	2018	4.3	171	107	46	2	0.0	2.2	17	0.0
MW8	2019	4.0	147	92	25	1	0.7	0.5	17	0.0
MW8	2020	4.2	150	94	36	1	0.6	1.9	22	0.0
MW8	2021	4.2	200	125	40	0	0.0	3.0	20	0.0
MW8	2022	4.2	170	122	39	2	0.0	2.0	18	0.0

Sample	Cal Year	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	2018	4.7	183	114	49	5	0.8	3.5	19	0.0
MW8	2019	5.0	221	138	47	3	1.1	3.1	27	0.0
MW8	2020	4.7	234	146	55	83	1.7	3.7	26	0.0
MW8	2021	4.4	224	140	52	2	1.4	3.8	24	0.0
MW8	2022	4.6	195	122	61	4	2.0	3.0	22	0.7

Table 28. Groundwater Quality Results – MW10

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
MW10	6/1/2022	4.3	187	117	60	6	0.0	4.0	18	0.9
MW10	29/4/2022	4.6	177		49	4	0.7	4.0	20	0.7
MW10	21/7/2022	4.5	250		67	13	1.0	5.5	25	0.9
MW10	13/10/2022	4.4	284		71	26	0.9	5.4	30	0.8

Sample	Cal Year	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	2018	4.4	182	114	46	1	0.3	2.6	21	0.4
MW10	2019	4.4	175	109	40	0	0.2	3.9	18	0.6
MW10	2020	4.5	185	116	42	3	0.4	4.4	19	0.8
MW10	2021	4.4	181	113	40	0	0.0	4.9	18	0.9
MW10	2022	4.5	225	117	62	12	0.7	4.7	23	0.8

Sample	Cal Year	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	2018	4.4	169	106	43	0	0.0	0.0	16	0.0
MW10	2019	4.3	170	106	38	0	0.0	3.0	17	0.5
MW10	2020	4.5	177	111	38	0	0.0	3.9	17	0.7
MW10	2021	4.4	180	112	38	0	0.0	4.2	17	0.8
MW10	2022	4.3	177	117	49	4	0.0	4.0	18	0.7

Sample	Cal Year	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	2018	4.5	190	119	49	3	0.8	4.2	24	0.6
MW10	2019	4.5	179	112	44	0	0.6	4.4	18	0.8
MW10	2020	4.5	194	121	48	11	1.0	4.6	21	0.9
MW10	2021	4.4	183	114	41	0	0.0	5.4	18	1.0
MW10	2022	4.6	284	117	71	26	1.0	5.5	30	0.9

Table 29. Groundwater Quality Results – MW11

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
MW11 (Off Old Telegraph Rd)	6/1/2022	4.8	139	87	49	4	1.0	2.0	16	2.0
MW11 (Off Old Telegraph Rd)	29/4/2022	5.0	139		22	22	5.6	2.0	11	5.0
MW11 (Off Old Telegraph Rd)	21/7/2022	5.8	201		16	23	15.0	4.0	8	7.4
MW11 (Off Old Telegraph Rd)	13/10/2022	6.0	237		18	31	19.0	5.0	8	5.7

Sample	Cal Year	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)	2018	4.8	148	93	37	1	1.0	2.8	16	1.5
MW11 (Off Old Telegraph Rd)	2019	4.5	145	90	31	0	0.0	2.8	16	1.3
MW11 (Off Old Telegraph Rd)	2020	4.7	149	94	28	4	0.9	3.1	16	1.7
MW11 (Off Old Telegraph Rd)	2021	4.8	147	92	29	6	3.0	3.2	15	2.8
MW11 (Off Old Telegraph Rd)	2022	5.4	179	87	26	20	10.2	3.3	11	5.0

Sample	Cal Year	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)	2018	4.6	135	85	36	0	0.0	2.3	14	1.5
MW11 (Off Old Telegraph Rd)	2019	4.5	136	85	28	0	0.0	1.9	15	1.1
MW11 (Off Old Telegraph Rd)	2020	4.5	138	86	27	1	0.5	2.9	14	1.3
MW11 (Off Old Telegraph Rd)	2021	4.8	139	87	27	2	1.0	2.6	14	2.0
MW11 (Off Old Telegraph Rd)	2022	4.8	139	87	16	4	1.0	2.0	8	2.0

Sample	Cal Year	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)	2018	5.0	158	99	39	2	3.0	3.1	19	1.6
MW11 (Off Old Telegraph Rd)	2019	4.6	154	96	33	1	0.0	3.3	16	1.4
MW11 (Off Old Telegraph Rd)	2020	4.9	159	100	29	7	1.9	3.3	18	2.4
MW11 (Off Old Telegraph Rd)	2021	4.8	154	96	30	11	6.6	4.1	16	4.4
MW11 (Off Old Telegraph Rd)	2022	6.0	237	87	49	31	19.0	5.0	16	7.4

Table 30. Groundwater Quality Results – MW12

Sample	Date	pH	Electrical Conductivity	Total Dissolved Solids	Chloride	Sulphate	Calcium	Magnesium	Sodium	Potassium
MW12	6/1/2022	4.8	109	68	32	9	2.0	1.0	12	1.0
MW12	29/4/2022	5.4	119		15	10	4.0	1.0	10	4.0
MW12	21/7/2022	6.2	98		7	7	7.1	1.0	6	4.0
MW12	13/10/2022	4.9	109		18	6	1.0	1.0	14	1.0

Sample	Cal Year	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	2018	5.4	103	64	16	11	1.0	0.2	16	0.0
MW12	2019	5.0	95	60	36	13	1.2	0.5	12	0.0
MW12	2020	5.2	129	80	16	12	3.2	1.4	13	1.6
MW12	2021	4.6	107	67	18	8	1.1	1.4	12	0.0
MW12	2022	5.3	109	68	18	8	3.5	1.0	10	2.5

Sample	Cal Year	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	2018	5.1	100	63	14	9	0.0	0.0	13	0.0
MW12	2019	4.8	93	58	13	8	0.6	0.0	11	0.0
MW12	2020	5.0	114	71	15	8	1.3	0.7	11	0.0
MW12	2021	4.4	98	61	17	6	0.9	1.1	11	0.0
MW12	2022	4.8	98	68	7	6	1.0	1.0	6	1.0

Sample	Cal Year	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	2018	5.7	105	66	18	13	1.5	0.6	20	0.0
MW12	2019	5.2	98	61	100	24	1.8	0.7	13	0.0
MW12	2020	5.5	164	102	18	23	8.7	2.6	15	6.2
MW12	2021	4.8	113	71	19	9	1.4	2.0	13	0.0
MW12	2022	6.2	119	68	32	10	7.1	1.0	14	4.0

### 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 several 24-hour periods during 2022.

Table 31. Groundwater Depth Changes with Rainfall Event

Well ID	Regional Aquifers	Ave of All Depth Readings after latest >50mm/day rainfall event (2022)	#Average Peak water level after >50mm/day rainfall event (2018)	Wet Weather High Groundwater RL (2022)	#Wet Weather High Groundwater RL (2018)	Lowest Level in Quarry at nearest location
<b>Rainfall Event 22/2/2022 66.2 mm</b>						
MW12	Hawkesbury Sandstone	194.4	194.7	196.4	196.7	
MW7	Hawkesbury Sandstone	182.6	184.3	184.6	186.3	
MW10	Maroota Sands	183.4	185.2	185.4	187.2	189.0
MW6	Maroota Sands	182.7	184.8	184.7	186.8	188.0
MW11	Maroota Sands (downstream)	180.0	183.1	182.0	185.1	
<b>Rainfall Events 2 – 7/3/2022 133.4+83.2+69.6 mm</b>						
MW12	Hawkesbury Sandstone	194.4	194.7	196.4	196.7	
MW7	Hawkesbury Sandstone	182.6	184.3	184.6	186.3	
MW10	Maroota Sands	183.4	185.2	185.4	187.2	189.0
MW6	Maroota Sands	182.8	184.8	184.8	186.8	188.0
MW11	Maroota Sands (downstream)	180.0	183.1	182.0	185.1	
<b>Rainfall Event 7/4/2022 60.0 mm</b>						
MW12	Hawkesbury Sandstone	194.4	194.7	196.4	196.7	
MW7	Hawkesbury Sandstone	182.6	184.3	184.6	186.3	
MW10	Maroota Sands	183.4	185.2	185.4	187.2	189.0
MW6	Maroota Sands	182.8	184.8	184.8	186.8	188.0

Well ID	Regional Aquifers	Ave of All Depth Readings after latest >50mm/day rainfall event (2022)	#Average Peak water level after >50mm/day rainfall event (2018)	Wet Weather High Groundwater RL (2022)	#Wet Weather High Groundwater RL (2018)	Lowest Level in Quarry at nearest location
<b>MW11</b>	Maroota Sands (downstream)	180.0	183.1	182.0	185.1	
<b>Rainfall Events 3 - 4/7/2022 103.4 + 86.2 mm</b>						
<b>MW12</b>	Hawkesbury Sandstone	194.4	194.7	196.4	196.7	
<b>MW7</b>	Hawkesbury Sandstone	182.7	184.3	184.7	186.3	
<b>MW10</b>	Maroota Sands	183.8	185.2	185.8	187.2	189.0
<b>MW6</b>	Maroota Sands	183.2	184.8	187.2	186.8	188.0
<b>MW11</b>	Maroota Sands (downstream)	180.6	183.1	184.6	185.1	
<b>Rainfall Event 8/10/2022 52.2 mm</b>						
<b>MW12</b>	Hawkesbury Sandstone	194.5	194.7	196.6	196.7	
<b>MW7</b>	Hawkesbury Sandstone	182.7	184.3	184.7	186.3	
<b>MW10</b>	Maroota Sands	184.1	185.2	186.1	187.2	192.4
<b>MW6</b>	Maroota Sands	183.5	184.8	185.5	186.8	191.2
<b>MW11</b>	Maroota Sands (downstream)	180.9	183.1	182.9	185.1	

# Reference Data from Groundwater Study Report (Dundon Consulting, April 2018)

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



#### 6.5.4 Interpretation and Effectiveness of Controls

Groundwater Levels have risen across the site during 2022 in response to higher rainfall. The largest rise was in March after some steady rainfall, and levels have been slowly rising since then. The Maroota Sands channel has risen to levels approximately higher than 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. 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 risen due to increases in regional water table from rainfall, there the quarry is not impacting on downstream waters.

The quarry floor levels are 2 metres above the Wet Weather High Groundwater Level, therefore the quarry floor is compliant. The lowest levels of the pit were back-filled 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 training with site technicians to ensure that loggers are read correctly, as required.
- 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.

*Figure Five. Wet Weather High Groundwater Level – A and B*

Plan of:	Annual Review & Compliance Report 2022 for Roberts Road Maroota Sand Quarry - Wet Weather High Groundwater Level Maroota Sands (2022)
Figure:	FIVE-A
Version/Date:	V1 30/03/2023
Our Ref:	12498_HMA_AR2022_Q007_V1_F5A

Location:	Maroota Quarry, Roberts Road, Maroota, NSW
Council:	Hills Shire Council
Tenure:	Not Applicable
Client:	Hodgson Quarries & Plant Pty Ltd

Source:	nearmap - Image Date 23/06/2022 Zone MGA 56
Survey:	Fyfe Quarry Contours 24/02/2022 NSW Spatial Services ELVISDEM Surrounding Contours Dated May 2017
Projection:	GDA2020/MGA Zone 56 EPSG:7856
Contour Interval:	0.5m

Plan By:	SK/JD
Project Manager:	LT



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.


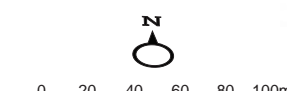
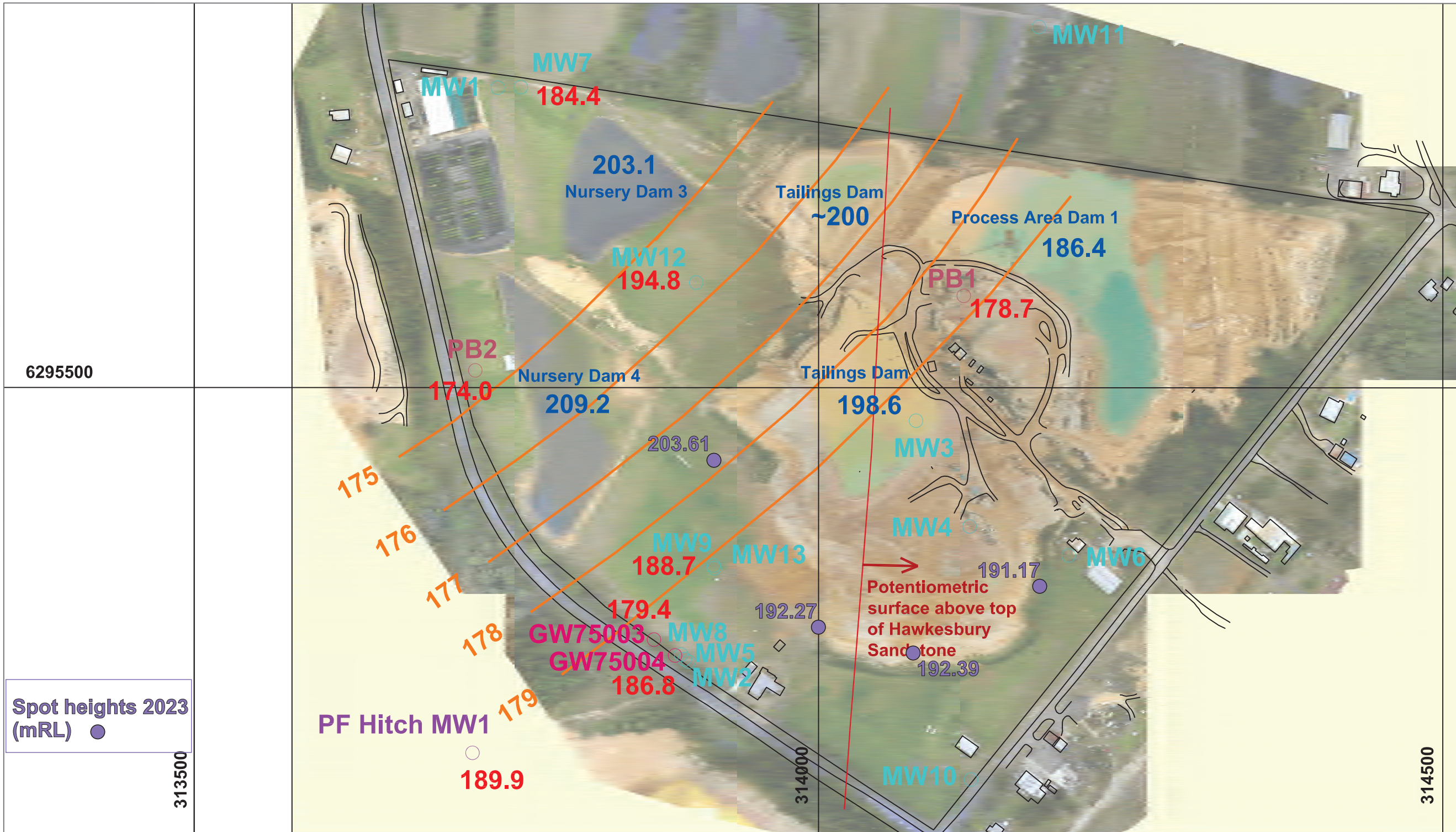


**Legend**

Property Boundary	Edge of Saturated Maroota Sands
Contours of Wet Weather High GW Level (mRL)	Groundwater Monitoring Well Location
Spot Heights 2023	

<b>Plan of:</b>	Annual Review & Compliance Report 2022 for Roberts Road Maroota Sand Quarry - Wet Weather High Groundwater Level Hawkesbury Sandstone (Feb 2018)	<b>Location:</b>	Maroota Quarry, Roberts Road, Maroota, NSW	<b>Source:</b>	Dundon Consulting Pty Ltd Figure 16 Dwg No. 06-0318-021d 08/03/2018	<b>Our Ref:</b>	12498_HMA_AR2022_C001_V0_F5B.cdr
<b>Figure:</b>	FIVE-B	<b>Council:</b>	Hills Shire Council	<b>Survey:</b>	Dundon Consulting Pty Ltd 08/03/2018	<b>Plan By:</b>	LT/JD/SK
<b>Sheet:</b>	1 of 1	<b>Tenures:</b>	N/A	<b>Projection:</b>	MGA	<b>Project Manager:</b>	LT
<b>Version/Date:</b>	V0 15/03/2023	<b>Client:</b>	Hodgson Quarries & Plant Pty Ltd	<b>Contour Interval:</b>	1m	<b>Office:</b>	Thornton

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.

Spot heights 2023 (mRL) ●

**LEGEND:**

- Hodgson monitoring bore
- Hodgson production bore
- 174.0 Hawkesbury Sandstone water level
- Contours of wet weather high GW level
- Potentiometric surface above top of HS

<b>DATE:</b>	8 March 2018	<b>SCALE:</b>	
<b>PROJECT NO:</b>	06-0318	<b>AUTHOR:</b>	PD
<b>DRAWING NO:</b>	06-0318-021d	<b>REVISION:</b>	D
<b>Dundon Consulting Pty Ltd</b>			

**Hodgson Quarry and Plant Pty Ltd**

**ROBERTS ROAD MAROOTA SAND QUARRY**  
**Wet Weather High Groundwater Level**  
**Hawkesbury Sandstone (February 2018)**

**Figure 16**

## 6.6 SITE WATER BALANCE

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

### 6.6.1 Requirements and Predictions

Condition 42 (a) of the consent states:

*[The Surface Water Management Plan includes]:*

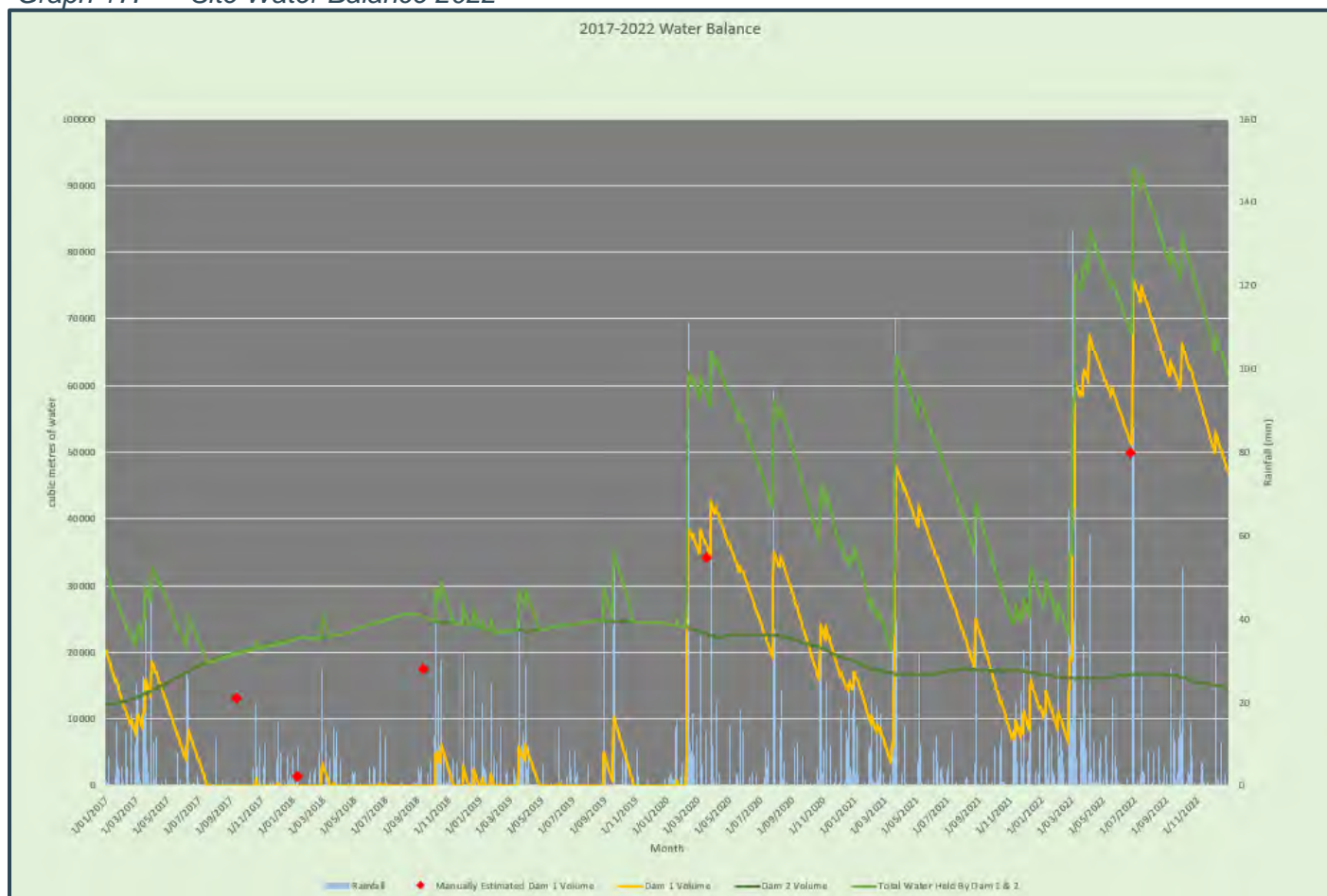
*Site Water Balance that:*

- *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.*

### 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 2022 is shown below.

Graph 17. Site Water Balance 2022



### 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 and from the BOM observations over 2022 was used to correlate site observations and measured dam water levels.

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.

With regard to the above issues, the volumes of water held in the dams has been estimated using the area of the dams (calculated using QGIS and Nearthmaps 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. In the amended water balance model, the calculated volume, using the dam area and logger data, is generally consistent with the predictions (see [Graph 19](#)).

Dissipation from the dams has been included in the water balance assumptions for this report as 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, it can be seen that the high rainfall replenished supplies of water in the dam. The added rainfall, coupled with lower production meant that 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 2023 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 22<sup>nd</sup> 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 2<sup>nd</sup> 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:*
  - *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;*

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 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.

### 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 annual noise monitoring was undertaken in November 2022 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 32. Operational Noise Criteria (dB(a))

Receiver	Day (7am to 6pm) LAeq(15min)	6am-7am LA1(1min)	6am-7am LAeq(15min)
<b>B</b>	44	50	40
<b>All other receivers</b>	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 be 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 33. Noise-related Conditions

Condition	Description
<b>L2.1</b>	Noise from the premises must not exceed the sound pressure level expressed as LA10 (15 minute) of 45dB(A), except as expressly provided by this licence
<b>L2.2</b>	Noise from the premises is to be measured or computed at any point within one metre of any residential boundary, or at any point within 30 metres of the dwelling where the dwelling is more than 30 metres from the boundary, to determine compliance with the noise level limits in Condition L2.1

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

Table 34. Predicted Noise Impacts, 2015 LAeq, 15min (dBA)

Scenario	All Locations
<b>Typical Operations</b>	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 35. 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 2022 are given in [Appendix L](#). The report states:

*Attended monitoring has identified that operational and road noise emissions generated by the quarry comply with relevant statutory noise limits. Furthermore, project related noise emissions are generally masked by extraneous non-quarry sources.*

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

Table 36. Operator-Attended Noise Survey Results

Location	LA10	LAeq	LA90	Quarry LAeq 15 min / 1min	Criteria LAeq 15 min / 1min	Comment
<b>Day Time Attended Monitoring Results – 4/11/2022</b>						
<b>A</b>	50	57	35	<35 / NA	43 / NA	Compliance achieved
<b>B</b>	49	51	34	<35 / NA	44 / NA	Compliance achieved
<b>C</b>	47	45	37	<30 / NA	43 / NA	Compliance achieved
<b>Morning Shoulder Attended Monitoring Results – 4/11/2022</b>						
<b>A</b>	42	44	36	<35 / <45	40 / 50	Compliance achieved
<b>B</b>	55	50	37	37 / 46	40 / 50	Compliance achieved
<b>C</b>	50	47	35	<30 / <40	40 / 50	Compliance achieved
<b>2021</b>	All sites compliant					
<b>2020</b>	All sites compliant					
<b>2019</b>	All sites compliant					
<b>2018</b>	All sites compliant					

Table 37. Road Noise Survey Results

Period	No of Quarry Trucks	Overall LAeq(1hr)	Project Truck Contribution	Criteria	Comment
<b>6am to 7am</b>	10	69	50	50	Compliance achieved
<b>7am to 8am</b>	2	65	44	55	Compliance achieved
<b>2021</b>	Compliant				
<b>2020</b>	Compliant				
<b>2019</b>	Compliant				
<b>2018</b>	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 38. Sound Power of Equipment

Plant	Overall Sound Power (dBA)	Criteria in Sound Power dBA	Comment
<b>PC350 Komatsu Excavator</b>	101	101 *	Compliance achieved.
<b>L180G Volvo Loader</b>	103	N/A	
<b>Sand Plant, conveyors, log wash and stacker</b>	100	N/A	
<b>PC400 Komatsu Excavator – commissioning test only</b>	105	101 *	This excavator was under repair for the majority of the year. Once re-commissioned, the Sound Power level will be re-checked.

Plant	Overall Sound Power (dBA)	Criteria in Sound Power dBA	Comment
<b>Total Fleet Sound Power</b>	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 2022 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 39. Effectiveness of Noise Management Controls*

Control	Interpretation	Effective?
<b>Perimeter Bunds</b>	Noise measured at residences complies with requirements and predictions	Yes
<b>Temporary bunds when extracting in close proximity to residences</b>	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
<b>Training and awareness for employees and truck drivers</b>	Noise measured at residences complies with requirements and predictions. Road noise attributed to the site complies with requirements and predictions.	Yes
<b>Mufflers on excavators</b>	Sound power levels were measured on two excavators; one did not comply, however off-site noise remains inaudible.	Yes
<b>New equipment purchased checked by qualified noise consultant for compliance prior to commissioning</b>	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.

## 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 40. 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. All bundwalls are vegetated and stable.	Yes

Objectives and targets from the Flora and Fauna Management Plan:

*Table 41. Flora and Fauna Management Objectives and Targets*

Objective / Target	Compliance Status
<b>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.</b>	Known species identified, baseline monitoring undertaken in Jan 2018. Monitoring is undertaken annually.
<b>Inspections of site flora and fauna to show minimal impacts from operations.</b>	Trends over time show minimised impacts.
<b>Consider the post extraction land use in the management and maintenance of conserved and rehabilitated vegetation.</b>	Conserved vegetation is managed in accordance with Landscape and Rehabilitation Plan

### 6.9.2 Monitoring Results Compliance and Trends

Monitoring of the remnant vegetation was undertaken in October 2022, in accordance with the Flora and Fauna Management Plan. A full report is supplied in the Biodiversity Report in [Appendix M](#).

A program of planting was undertaken in October – November 2020 with the aim of improving the vegetation buffer on the perimeter of the site. Low shrubs including bottlebrush species were planted on the Old Northern Rd perimeter bund where pruning by utilities companies has caused severe damage in the past. The 2022 Biodiversity Report states that “The native species which have been planted on a bund wall bordering Roberts Road and Old Northern Road are growing well. Almost all of these species have reached reproductive maturity.”

### 6.9.3 Interpretation and Effectiveness of Controls

The Annual Biodiversity Monitoring Report produced by South East Environmental noted that:

- “The site does appear to have shown some tolerance to the extreme wet conditions that the two year cycle of La Nina has brought to the region. Evidence of some die back, particularly of large shrubs is apparent although juvenile growth is reasonably prolific. Forbs and ferns have thrived in the wet conditions and have increased in diversity and density since the previous reporting period. Native grasses have continued to increase in density. Particularly in bare patches where soils are too shallow for shrubs and canopy species to become established.”

- “Natural native regeneration from the soil seed bank is occurring throughout much of the remnant native vegetation areas. Fencing to exclude livestock has most likely assisted in the ability for natural regeneration to occur undisturbed.”
- The report also mentions that while weeds are still apparent, particularly adjacent to the carpark area, the density has decreased, leading to a recommended decrease in weed management activities.

### 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, with examples given in [Appendix N](#).

Table 42. 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 submitted to the DPE in March 2018 and 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 43](#). None of these criteria have yet been achieved. The LRMP will require updating to the Mod 4 final landforms presented in [Appendix B](#). Once the new LRMP is approved, a Conservation and Rehabilitation Bond can be calculated to this new landform.

Table 43. Rehabilitation Performance Indicators and Completion Criteria

Objective	Performance Indicator	Completion Criteria	Monitoring Methodology and Responsibility	Monitoring Frequency	Justification /Source	Current Progress and Expected Completion
<b>Phase 1 - Decommissioning</b>						
<b>Domain 1 - Infrastructure</b>						
<b>All infrastructure and services not suitable for the final landuse will be removed.</b>	Services not required for final landuse are disconnected.	Relevant services disconnected by qualified contractors	Report from qualified contractors	Upon decommissioning completion	EIS/LRMP	Not commenced/ Post extraction completion
	Infrastructure not required for final land use is removed	Relevant infrastructure removed.	Inspection and report	Upon decommissioning completion	EIS/LRMP	Not commenced/ Post extraction completion
<b>All roads and hardstand areas to be retained for the final landuse will be reduced in width/size to that suitable for the final landuse.</b>	Roads not required for final landuse are removed.	Roads removed unless specified to be retained	Inspection and report	Upon decommissioning completion	EIS/LRMP	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/LRMP	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/LRMP	Not commenced/ Post extraction completion
<b>Sediment runoff to be contained</b>	Sediment retained in water management structures	Sediment Dams 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.	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 for capacity by quarry manager.	For the final water body, on construction completion and monthly until completion.	DECC- Managing Urban Stormwater, EIS, SWMP and LRMP	Temporary dams are in place. Final Water Body construction not commenced/ Post extraction completion
<b>Domain free from hazardous materials</b>	No hazardous material remain	All hazardous material removed	Contamination report prepared by qualified person. Register of Hazardous Material.	Following decommissioning with follow up validation testing as required.	LRMP	Not commenced/ Post extraction completion
<b>All remaining stockpiles will be removed and/or reused in the establishment of the final landform.</b>	No remaining stockpiles	All remaining stockpiles are removed.	Inspection and report	Upon decommissioning completion	EIS/LRMP	Not commenced/ Post extraction completion

Objective	Performance Indicator	Completion Criteria	Monitoring Methodology and Responsibility	Monitoring Frequency	Justification /Source	Current Progress and Expected Completion
<b>Phase 1 – Decommissioning (continued)</b>						
<b>Domain 3 - Water Management</b>						
<b>Sediment dams to be retained in the final landform are converted to clean water dams.</b>	No sediment laden water enters the remaining clean water dam system.	<ul style="list-style-type: none"> <li>Final water body has been desilted, if required to increase capacity and minimise sediment entrainment in discharged water.</li> <li>The catchment areas for the final water body is sufficiently rehabilitated so as to only contain clean water runoff.</li> </ul>	Inspection by quarry manager and suitably qualified person.	On construction completion and monthly until completion	DECC- Managing Urban Stormwater, EIS, SWMP and LRMP	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.		For the final water body, on construction completion and monthly until completion.		DECC- Managing Urban Stormwater, EIS, SWMP and LRMP
<b>Domain 4 – Overburden Emplacement Area</b>						
<b>All overburden will be removed and reused in the establishment of the final landform.</b>	No remaining overburden stockpiles	All overburden stockpiles are removed and or incorporated into the final landform.	Inspection and report	Upon decommissioning completion	EIS, and LRMP	Not commenced/ Post extraction completion
<b>Sediment runoff to be contained.</b>	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 LRMP	Final Water Body construction not commenced/ Post extraction completion
<b>Domain 6 - Open Cut Void</b>						
<b>No activities within this domain are required during this phase</b>						
<b>Domain 9 - Native Vegetation Conservation Area</b>						
<b>No activities within this domain are required during this phase</b>						



Objective	Performance Indicator	Completion Criteria	Monitoring Methodology and Responsibility	Monitoring Frequency	Justification /Source	Current Progress and Expected Completion
<b>Phase 2 - Landform Establishment</b>						
<b>Domain 1 – Infrastructure</b>						
<b>Domain landform is safe, stable and non-polluting, fit for the purpose of the intended final land use.</b>	Final landform contours similar to proposed final landform contours.	<ul style="list-style-type: none"> <li>Slope lengths in rehabilitated areas shall not exceed 20m for a 3H: 1V batter i.e. an earth bank shall be installed.</li> <li>Slope lengths in rehabilitated areas shall not exceed 30m for a 4H: 1V batter i.e. an earth bank shall be installed.</li> <li>Slope lengths in rehabilitated areas shall not exceed 40m for batters &gt;4H: 1V i.e. an earth bank shall be installed.</li> </ul>	Survey on completion by registered surveyor.	Upon completion of landform establishment phase.	DECC- Managing Urban Stormwater, EIS, SWMP and LRMP	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 LRMP	Final Water Body construction not commenced/ Post extraction completion
<b>Domain 3 - Water Management</b>						
<b>Final water body is non-polluting and fit for the purpose of the intended final land use.</b>	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 engineers 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. 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 LRMP	Final Water Body construction not commenced/ Post extraction completion
<b>Domain 4 - Overburden Emplacement Area</b>						
<b>Ensure overburden emplacement areas has been battered/shaped to the final landform.</b>	Final landform contours similar to proposed final landform contours.	<ul style="list-style-type: none"> <li>Slope lengths in rehabilitated areas shall not exceed 20m for a 3H: 1V batter i.e. an earth bank shall be installed.</li> <li>Slope lengths in rehabilitated areas shall not exceed 30m for a 4H: 1V batter i.e. an earth bank shall be installed.</li> <li>Slope lengths in rehabilitated areas shall not exceed 40m for batters &gt;4H: 1V i.e. an earth bank shall be installed.</li> </ul>	Survey on completion by registered surveyor.	Upon completion of landform establishment phase.	DECC- Managing Urban Stormwater, EIS, SWMP and LRMP	Not commenced/ Post extraction completion
<b>Sediment runoff to be contained.</b>	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.	Visual Inspection on construction completion and monthly until completion.	DECC- Managing Urban Stormwater, EIS, SWMP and LRMP	Final Water Body construction not commenced/ Post extraction completion

Objective	Performance Indicator	Completion Criteria	Monitoring Methodology and Responsibility	Monitoring Frequency	Justification /Source	Current Progress and Expected Completion
<b>Phase 2 - Landform Establishment (continued)</b>						
<b>Domain 6 - Open Cut Void</b>						
<b>Domain landform is safe, stable and non-polluting, fit for the purpose of the intended post-mining land use(s)</b>	Final landform contours similar to proposed final landform contours.	<ul style="list-style-type: none"> <li>Slope lengths in rehabilitated areas shall not exceed 20m for a 3H: 1V batter i.e. an earth bank shall be installed.</li> <li>Slope lengths in rehabilitated areas shall not exceed 30m for a 4H: 1V batter i.e. an earth bank shall be installed.</li> <li>Slope lengths in rehabilitated areas shall not exceed 40m for batters &gt;4H: 1V i.e. an earth bank shall be installed.</li> </ul>	Survey on completion by registered surveyor.	Upon completion of landform establishment phase.	DECC- Managing Urban Stormwater, EIS, SWMP and LRMP	Not commenced/ Post extraction completion
<b>Domain landform is effectively drained and protected from erosion</b>	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 LRMP	Final Water Body construction not commenced/ Post extraction completion
<b>Access tracks to be retained</b>	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 LRMP	Not commenced/ Post extraction completion
<b>Materials (including topsoils of the disturbed areas) are recovered, appropriately managed and used efficiently as resource in the rehabilitation</b>	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 in 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 LRMP	Not commenced/ Post extraction completion
<b>Domain 9 - Native Vegetation Conservation Area</b>						
<b>No activities within this domain are required during this phase</b>						

Objective	Performance Indicator	Completion Criteria	Monitoring Methodology and Responsibility	Monitoring Frequency	Justification /Source	Current Progress and Expected Completion
<b>Phase 3 - Growth Medium Development</b>						
<b>Domain A - Infrastructure</b>						
No revegetation is to occur in this domain, therefore no activities are required during this phase						
<b>Domain B - Water Management</b>						
No revegetation is to occur in this domain, therefore no activities are required during this phase						
<b>Domain C &amp; D - Rehabilitation Area – Grassland/Woodland</b>						
<b>Establish soil/growing medium suitable for establishment of grassland or woodland vegetation community</b>	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 LRMP	Not commenced/ Post landform establishment
	<b>Hydromulch Area-</b> <ul style="list-style-type: none"> <li>Minimum 300mm of subsoil emplaced over deep ripped surface.</li> <li>Minimum of 100mm of topsoil emplaced over subsoil layer.</li> </ul>	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 LRMP	Not commenced/ Post landform establishment
	<b>Buffer Setbacks and Embankments with 1V:3H Grade-</b> <ul style="list-style-type: none"> <li>Minimum 300mm of subsoil emplaced over deep ripped surface.</li> <li>Minimum of 100mm of topsoil emplaced over subsoil layer.</li> <li>Minimum of 75mm of organic mulch emplaced over topsoil.</li> </ul>	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 LRMP	Not commenced/ Post landform establishment
	<b>Embankments Steeper than 1V:3H Grade-</b> <ul style="list-style-type: none"> <li>Minimum 300mm of subsoil emplaced over deep ripped surface.</li> <li>Minimum of 100mm of topsoil emplaced over subsoil layer.</li> <li>Jute matting pinned to topsoiled bank.</li> <li>Minimum of 75mm of organic mulch emplaced over topsoil.</li> </ul>	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 LRMP	Not commenced/ Post landform establishment
	<b>Permanent Bundwalls-</b> <ul style="list-style-type: none"> <li>Minimum 300mm of topsoil emplaced over deep ripped surface.</li> <li>Jute matting pinned to topsoiled bank.</li> <li>Minimum of 75mm of organic mulch emplaced over topsoil.</li> </ul>	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 LRMP	Not commenced/ Post landform establishment
<b>Domain J - Native Vegetation Conservation Area</b>						
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
<b>Phase 4 - Ecosystem and Land use Establishment</b>						
<b>Domain A - Infrastructure</b>						
No revegetation is to occur in this domain, therefore no activities are required during this phase						
<b>Domain B - Water Management</b>						
Wetlands water management structure to remain therefore no activities required during this phase						
<b>Domain C &amp; D - Rehabilitation Area – Grassland/Woodland</b>						
<b>Re-establishment of a grassland/woodland community with a similar composition to the pre-disturbance community i.e. Shale-Sandstone Transition Forest.</b>	Revegetation species mix applied as suggested in Rehabilitation Management Plan	<ul style="list-style-type: none"> <li>A target coverage factor of 70% will be subject to further refinement.</li> <li>Low mortality of plants used in progressive revegetation with 75% becoming established 3 years.</li> </ul>	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 LRMP	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	<ul style="list-style-type: none"> <li>Evidence of logs and other fallen timber spread over re rehabilitated areas.</li> <li>Ground fauna species of similar diversity to adjacent areas of similar habitat.</li> </ul>	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
<b>Domain J - Native Vegetation Conservation Area</b>						
<b>Ensure that the conservation areas are progressing towards the Shale-Sandstone Transition Forest vegetation community.</b>	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
	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

Objective	Performance Indicator	Completion Criteria	Monitoring Methodology and Responsibility	Monitoring Frequency	Justification /Source	Current Progress and Expected Completion
<b>Phase 5 - Ecosystem and Land use Sustainability</b>						
<b>Domain A - Infrastructure</b>						
No activities are required during this phase						
<b>Domain B - Water Management</b>						
<b>Water contained in the final landform is consistent with the baseline ecological, hydrological and geomorphic conditions of the surrounding environment</b>	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
<b>Domain C &amp; D - Rehabilitation Area – Grassland/Woodland</b>						
<b>Re-establishment of a grassland/woodland community with a similar composition to the pre-disturbance community i.e. Shale-Sandstone Transition Forest.</b>	Vegetation self-sustaining.	Monitoring confirms: <ul style="list-style-type: none"> <li>Evidence of new growth of endemic species.</li> <li>Evidence of successive generations of endemic species</li> <li>No further active weed control required (beyond that considered necessary at analogue sites).</li> </ul>	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	<ul style="list-style-type: none"> <li>Connectivity between current and future rehabilitated areas are established adjacent to existing and future areas of vegetation where possible.</li> <li>Patches are not be separated by more than 10 metres where possible.</li> </ul>	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.	<ul style="list-style-type: none"> <li>Evidence of varying sized rocks between 20 mm and greater than 200 mm spread over rehabilitated areas.</li> <li>Ground dwelling fauna species of similar diversity to adjacent areas of similar habitat.</li> </ul>	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
<b>Phase 5 - Ecosystem and Land use Sustainability (continued)</b>						
<b>Domain J - Native Vegetation Conservation Area</b>						
<b>Conservation area is established and self-sustaining</b>	Vegetation self-sustaining.	Monitoring confirms: <ul style="list-style-type: none"> <li>Evidence of new growth of endemic species.</li> <li>Evidence of successive generations of endemic species</li> <li>No further active weed control required (beyond that considered necessary at analogue sites).</li> </ul>	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	<ul style="list-style-type: none"> <li>Connectivity between conservation areas are established adjacent to existing and future areas of vegetation where possible.</li> <li>Patches are not be separated by more than 10 metres where possible.</li> </ul>	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
<b>Phase 6 - Relinquishment</b>						
<b>All Domains</b>						
<b>Relinquishment</b>	Demonstrated compliance with all completion criteria	Outlined above	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.

### **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.

Progressive rehabilitation in the extraction cells has not occurred on the site to date due to the lack of finished faces. Although this results in erosion on the internal faces of the extraction area, sediment is captured within the pit void and does not impact on surrounding land or waterways.

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.
- Updating and submission of the Conservation and Rehabilitation Bond will be undertaken.

## 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 44. Future Targets

Aspect	Target	Criteria
<b>Air Quality</b>	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 <a href="#">6.3.1</a>
<b>Water</b>	To ensure there is no reasonably preventable impact on surface water external to the site or regional groundwater	Water quality criteria outlined in Sections <a href="#">6.4.1</a> , <a href="#">6.5.1</a> , and <a href="#">6.7.1</a> .
<b>Sediment and Erosion</b>	To control erosion on the site to as to reasonable prevent impacts off site	Sediment and erosion criteria are outlined in <a href="#">6.4</a>
<b>Noise</b>	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 <a href="#">6.8.1</a>
<b>Flora and Fauna</b>	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
<b>Rehabilitation</b>	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

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

VGT has been approved to prepare the Conservation and Rehabilitation Bond via letter dated 02/11/2021.

Calculations will be undertaken using recent survey and the updated final landform design, and submitted for approval during 2023.

### 8.3 INDEPENDENT AUDIT

*Table 45. 2020 Independent Audit Actions*

<b>Opportunity</b>	<b>Actions</b>	<b>Date Achieved</b>
<b>Regular inspection and maintenance of screen plantings</b>	Inspection to be added to quarterly environmental management checklist	31st October 2020.
<b>Regular inspection and maintenance of areas of erosion</b>	Inspection to be added to quarterly environmental management checklist	31st October 2020.
<b>Provision of additional spill kits in operational areas in the event of a hydrocarbon spill or leak</b>	Additional spill kits will be purchased and placed in relevant mobile plant. Their use and location will be discussed at a regular toolbox meeting.	31st December 2020.
<b>Further onsite segregation of wastes to allow for better recycling opportunities</b>	Recycling opportunities will be added to the regular toolbox meetings.	Ongoing

Another Independent Environmental Audit is due in 2023.

## 8.4 ACTIONS AND IMPROVEMENTS PLANNED FOR 2023

Table 46. Summary of Proposed Improvements

Aspect	Improvement
<b>Transport and Traffic</b>	The TMP is to be reviewed prior to June 2023 (after 6 months of operation) then annually thereafter. Drivers Code of Conduct will be reviewed annually.
<b>Air Quality</b>	Air Quality Management Plan will be updated in accordance with the recommendations of the Air Quality Monitoring Review.  Continue monitoring and management as outlined in AQMP.
<b>Water</b>	Liaise with Water and Planning authorities regarding the further need for WMP annual updates.  Investigate whether sprinkler usage is significant enough to record for the water balance calculations.  Continue monitoring and management in accordance with WMP.
<b>Noise</b>	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.  Update Noise Management Plan for Mod 4 changes.
<b>Flora and Fauna</b>	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 <a href="#">6.9</a> .  Update Flora and Fauna Management Plan for Mod 4 changes.
<b>Rehabilitation</b>	Monitor and maintain perimeter vegetation.  Update the LRMP to reflect changes in the final landform, and the importation of material.
<b>Administrative</b>	Environmental Management Strategy and sub-plans to be reviewed and revised following submission of this ARCR and the IEA.

## References

- Dundon Consulting. (April 2018). *Roberts Rd Maroota Sand Quarry Groundwater Study Report*.
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- 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*.

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## Appendix A

## Compliance Review

# Hodgsons Roberts Rd Sand Quarry Condition Compliance Summary January to December 2022

## DA Conditions

Compliant	67
Non Compliant	10

Mod 2 Condition No.	Mod 4 Condition No.	Condition Text (Mod 4 changes shown in red text - active following 14/08/2021)	Details of compliance status	Compliant Y/N	Category	Where addressed in Annual Review
<b>Obligation to Prevent and Minimise Harm to the Environment</b>	1	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.	Y	Administration	
<b>Adherence to Terms of DA and EIS</b>	2	2	The Applicant shall:(a) carry out the development generally in accordance with the EIS, Modification 1, <del>Modification 3 and Modification 2</del> <b>Modification 2, Modification 3 and Modification 4</b> ; and (b) comply with the conditions of this consent	N	Administration	Section 2
<b>Compliance</b>	3	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.	Y	Administration	
	4	4	The Applicant shall ensure that all contractors and sub-contractors are aware of, and comply with, the Conditions of this Consent.	Y	Administration	Appendix O
	5	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.	Y	Administration	
	6	6	The Applicant will 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.	Y	Administration	Appendix P
	6 (a)	6 (a)	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			Appendix A
	6 (b)	6 (b)	(b) a review of the effectiveness of the environmental management of the development			Section 6
	6 (c)	6 (c)	(c) the results of environmental monitoring required under this Consent or other approvals, including interpretations and discussion by a suitably qualified person;			Section 6
	6 (d)	6 (d)	(d) a listing of any variations obtained to approvals applicable to the DA since the last report;			Section 4
	6 (e)	6 (e)	(e) a record of all complaints and the actions taken to mitigate all such complaints;			Section 5.4, Appendix G
	6 (f)	6 (f)	(f) a report detailing the rehabilitation measures undertaken since the last report; and			Section 6.10

# Hodgsons Roberts Rd Sand Quarry Condition Compliance Summary January to December 2022

## DA Conditions

Compliant	67
Non Compliant	10

Mod 2 Condition No.	Mod 4 Condition No.	Condition Text (Mod 4 changes shown in red text - active following 14/08/2021)	Details of compliance status	Compliant Y/N	Category	Where addressed in Annual Review
6 (g)	6 (g)	(g) environmental management targets and strategies for stages of the development yet to be completed.				Section 7
7	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.	Compliance Report 2022 version F0 submitted 30/03/2022, DPE acceptance response received 16/05/2022.	Y	Administration	None required from Annual Report 2021
<b>Commencement and Duration / Limits on Approval</b>	8 a)	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;	The relevant bundwalls have been completed.			Figures 2 - 4
	8 b)	(b) submitted the Conditions Compliance Report required under Condition 6; and	Compliance Report 2022 version F0 submitted 30/03/2022, DPE acceptance response received 16/05/2022.	Y	Administration	Appendix A, Appendix P
	8 c)	(c) obtained all licences necessary for the commencement of extraction.	EPA licence current Bore licences current			Section 4, Appendix C, Appendix D
	9	The duration of extraction under this Consent is until 31 May <del>2025</del> 2030. The Applicant shall ensure that rehabilitation of all disturbed areas is completed within six months of completion of extraction.	Extraction not yet completed	Y	Administration	
	9A (a)	(a) process or dispatch more than 480,000 tonnes of quarrying products at the site in any calendar year;	Compliant			Section 5
	9A (b)	(b) receive more than 320,000 tonnes of VENM and ENM (in total) at the site in any calendar year;	Compliant	Y	Operations	Section 5.3
	9A (c)	(c) import more than 3 million tonnes of VENM and ENM to the site; and	Compliant			Section 5.3
	9A (d)	(d) import VENM and ENM beyond 31 May 2030.	Compliant			
<b>Complaints Procedures</b>	10 a)	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	Complaints phone number is advertised in the white pages and signage at the front gate.	Y	Administration	Section 5.4
	10 b)	(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.	Address is publicised in White Pages, website and signage at the front gate.			Section 5.4
	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.	Complaints log book available on site. No complaints received this report period.	Y	Administration	Section 5.4, Appendix G

# Hodgsons Roberts Rd Sand Quarry Condition Compliance Summary January to December 2022

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Compliant	67
Non Compliant	10

Mod 2 Condition No.	Mod 4 Condition No.	Condition Text (Mod 4 changes shown in red text - active following 14/08/2021)	Details of compliance status	Compliant Y/N	Category	Where addressed in Annual Review	
12 a)	12 a)	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	No complaints received.	Y	Administration	Not required	
12 b)	12 b)	(b) if adverse impacts are identified, undertake all practicable measures to modify the activity which may be causing the impacts.	No complaints received.			Not required	
13	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.	Not applicable as yet	Y	Administration	Not required	
14 a)	14 a)	If the Secretary is satisfied that an independent investigation is required, the Applicant shall: (a) 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	Not applicable as yet		Administration	Not required	
14 b)	14 b)	(b) 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.	Not applicable as yet	Y		Not required	
<b>Dispute Resolution</b>	15	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.	Not applicable as yet	Y	Administration	Not required

# Hodgsons Roberts Rd Sand Quarry Condition Compliance Summary January to December 2022

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Non Compliant	10

Mod 2 Condition No.	Mod 4 Condition No.	Condition Text (Mod 4 changes shown in red text - active following 14/08/2021)	Details of compliance status	Compliant Y/N	Category	Where addressed in Annual Review	
Hours of Operation	16	16	Unless prior written approval of the EPA is obtained, the hours of operation are: <ul style="list-style-type: none"> <li>• construction: 7.00am to 6.00pm Monday to Friday</li> <li>• extraction and processing of material: 7.00am to 6.00pm, Monday to Friday and 7.00am to 1.00pm on Saturdays</li> <li>• vehicle loading: 6.00am to 6.00pm, Monday to Friday and 6.00am to 1.00pm on Saturdays.</li> </ul> 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.	Hours included in induction	Y	Administration	Section 5.1
Depth of Extraction	17	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).	Extraction has not progressed deeper than Wet Weather High Groundwater level	Y	Operations	Section 6.5, Figure Five A, B
Production Data	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 this data be supplied on a financial year basis. Relevant form has been supplied as required by MEG	Y	Administration	Section 5.1, Appendix E	
	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).	MEG requires this data be supplied on a financial year basis. Relevant form has been supplied as required by MEG	Y	Administration	Section 5.1, Appendix E	
Environmental Management Plan	18	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.	Construction Environmental Management Plan updated July 2016. Approved 9/12/16	Y	Administration	
	19	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.	All current plans and strategies with approvals are available at <a href="http://www.vgt.com.au/hodgsons">www.vgt.com.au/hodgsons</a>	Y	Administration	



# Hodgsons Roberts Rd Sand Quarry Condition Compliance Summary January to December 2022

## DA Conditions

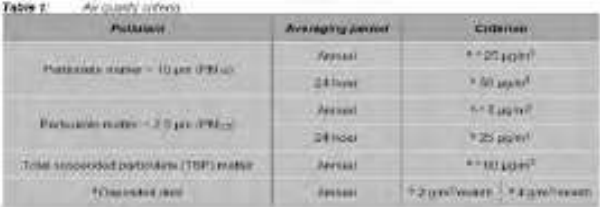
Compliant	67
Non Compliant	10

Mod 2 Condition No.	Mod 4 Condition No.	Condition Text (Mod 4 changes shown in red text - active following 14/08/2021)	Details of compliance status	Compliant Y/N	Category	Where addressed in Annual Review
20	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); <b>(f) The Traffic Management Plan (Conditions 50A)</b> <del>(f)</del> <b>(g) the Flora and Fauna Management Plan (Condition 55); and</b> <del>(g)</del> <b>(h) the Rehabilitation Plan (Condition 58).</b>	All current plans and strategies with approvals are available at <a href="http://www.vgt.com.au/hodgsons">www.vgt.com.au/hodgsons</a> . OEMP not updated to include Traffic Management Plan	N	Administration	
21	21	The Applicant shall make copies of both EMPs available to Council, EPA and <del>DPI Water</del> <b>(DPIE Water)</b> 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.	All current plans and strategies with approvals are available at <a href="http://www.vgt.com.au/hodgsons">www.vgt.com.au/hodgsons</a>	Y	Administration	
22	22	The Applicant shall, in consultation with the Secretary, the EPA and the <del>DPI Water</del> <b>(DPIE Water)</b> , 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. <b>The EMR shall be responsible for determining if any significant changes to the Operational EMP should be referred to the Secretary for approval.</b> The Applicant shall implement the approved management plan as approved from time to time by the Secretary.	All current plans and strategies with approvals are available at <a href="http://www.vgt.com.au/hodgsons">www.vgt.com.au/hodgsons</a>	N	Administration	
23		Deleted				
24		Deleted				
25		Deleted				
26	26 (a)	<del>Deleted</del> <b>(a) ensure only verified VENM and ENM is received at the site;</b>	Compliant	Y	Operations	Section 5.3
	26 (b)	<b>(b) collect data on the VENM and ENM received including details of the origin, date, and quantity received; and</b>	Compliant			Section 5.3, Appendix E.
	26 (c)	<b>(c) include a copy of this data in the Annual Review.</b>	Compliant			Section 5.3, Appendix E.
<b>Waste</b>	27	<del>The Applicant must not cause, permit or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal, or any waste generated at the premises to be disposed of at the premises, except as expressly permitted by a licence under the Protection of the Environment Operations Act 1997. This condition only applies to the storage, treatment, processing, reprocessing or disposal of waste at the premises if it requires an environment protection licence under the Protection of the Environment Operations Act 1997.1</del> <b>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.</b>	No other waste has been received by the premises. Waste is managed on site through the use of bins (removed by contractor) and waste oil is removed from the site as required.	Y	Operations	

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<b>Air Quality Criteria</b>	28	<p>The Applicant shall take all practical steps to manage the development so that the ambient air quality goals for total suspended particles (TSP) of 90 µg/m<sup>3</sup> (annual average), particulate matter (PM10) of 50 µg/m<sup>3</sup> (24 hours average) and 30 µg/m<sup>3</sup> (annual average) and the dust deposition goal of 4gm/m<sup>2</sup> (annual average) are not exceeded as a result of the development, when measured at any monitoring location specified in the Air Quality Management Plan. 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.</p>  <p><b>Table 1: Air quality criteria</b></p> <table border="1"> <thead> <tr> <th>Pollutant</th> <th>Averaging period</th> <th>Criteria</th> </tr> </thead> <tbody> <tr> <td>Particulate matter = 10 µg (PM10)</td> <td>Annual</td> <td>≤ 20 µg/m<sup>3</sup></td> </tr> <tr> <td></td> <td>24 hour</td> <td>≤ 50 µg/m<sup>3</sup></td> </tr> <tr> <td>Particulate matter = 2.5 µg (PM2.5)</td> <td>Annual</td> <td>≤ 8 µg/m<sup>3</sup></td> </tr> <tr> <td></td> <td>24 hour</td> <td>≤ 25 µg/m<sup>3</sup></td> </tr> <tr> <td>Total suspended particulate (TSP) matter</td> <td>Annual</td> <td>≤ 10 µg/m<sup>3</sup></td> </tr> <tr> <td>Deposited dust</td> <td>Annual</td> <td>≤ 2 g/m<sup>2</sup>/year; ≤ 4 g/m<sup>2</sup>/exam</td> </tr> </tbody> </table> <p><b>Notes:</b>                      * Total impact (i.e. incremental increase in concentration due to the development plus background concentrations due to all other sources etc.)                      † Incremental impact (i.e. incremental increase in concentration due to the development on its own)                      ‡ Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fire incidents or any other activity agreed by the Secretary.                      †† Deposited dust is to be assessed as residue solids as defined by the standards Australia, AS/NZS 2066:10:1 2009.                      ††† Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method</p>	Pollutant	Averaging period	Criteria	Particulate matter = 10 µg (PM10)	Annual	≤ 20 µg/m <sup>3</sup>		24 hour	≤ 50 µg/m <sup>3</sup>	Particulate matter = 2.5 µg (PM2.5)	Annual	≤ 8 µg/m <sup>3</sup>		24 hour	≤ 25 µg/m <sup>3</sup>	Total suspended particulate (TSP) matter	Annual	≤ 10 µg/m <sup>3</sup>	Deposited dust	Annual	≤ 2 g/m <sup>2</sup> /year; ≤ 4 g/m <sup>2</sup> /exam	On 12/4/22 the site was notified that the Insoluble Annual Average had exceeded the consent criteria. The exceedance continued until Nov 2022	N	Air Quality	Section 6.3
Pollutant	Averaging period	Criteria																									
Particulate matter = 10 µg (PM10)	Annual	≤ 20 µg/m <sup>3</sup>																									
	24 hour	≤ 50 µg/m <sup>3</sup>																									
Particulate matter = 2.5 µg (PM2.5)	Annual	≤ 8 µg/m <sup>3</sup>																									
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Total suspended particulate (TSP) matter	Annual	≤ 10 µg/m <sup>3</sup>																									
Deposited dust	Annual	≤ 2 g/m <sup>2</sup> /year; ≤ 4 g/m <sup>2</sup> /exam																									
	28A	The air quality criteria in Table 1 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.	Not applicable as yet	Y	Air Quality																						
<b>Air Quality Management</b>	29	The Applicant shall prepare an Air Quality Management Plan as part of the EMP. The Air Quality Management Plan shall:	Air Quality Management Plan was submitted as part of the 2016 OEMP																								
	29 a)	(a) identify existing and potential sources of dust deposition, TSP and fine particulates (PM10 and PM2.5) 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;																									
	29 (b)	(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;																									

# Hodgsons Roberts Rd Sand Quarry Condition Compliance Summary January to December 2022

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Non Compliant	10

Mod 2 Condition No.	Mod 4 Condition No.	Condition Text (Mod 4 changes shown in red text - active following 14/08/2021)	Details of compliance status	Compliant Y/N	Category	Where addressed in Annual Review
29 c)	29 c)	(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. <del>no more than 3 hectares of the site are exposed and active at any one time.</del> The use of a polymer in the water to minimise dust impacts shall be investigated as part of this Plan		Y	Air Quality	
29 d)	29 d)	(d) provide details of actions to ameliorate impacts if they exceed the relevant criteria; and				
29 e)	29 e)	(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				
29	29	The Applicant shall implement the approved management plan as approved from time to time by the Secretary	Plan has been implemented			Section 6.3
	29A (a)	The Applicant must commission an expert review of the air quality monitoring system at the site. This review must: (a) be undertaken by a suitably qualified and experience person(s) whose appointment has been approved by the Secretary;	Review submitted 23/11/2022. Approved 28/2/2023	Y	Air Quality	Section 6.3.4, Appendix P
	29A (b)	(b) review the accuracy of the air quality monitoring system at the site over a 12 month period, in general accordance with the <i>Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales (DEC, 2007)</i> and with a particular focus on PM2.5 monitoring;	Review submitted 23/11/2022. Approved 28/2/2023			
	29A (c)	(c) provide recommendations (where required) to improve the accuracy of air quality monitoring system at the site; and	Review submitted 23/11/2022. Approved 28/2/2023			
	29A (d)	(d) be undertaken in consultation with the EPA.	Review submitted 23/11/2022. Approved 28/2/2023			
	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 30 November 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.	Review submitted 23/11/2022. Approved 28/2/2023	Y	Air Quality	
30	30	Activities occurring at the premises must be carried out in a manner that will minimise emissions of dust from the premises	Plan has been implemented	Y	Air quality	
31	31	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.	Work ceases when visible dust crossing public roads or lands not owned by the applicant.	Y	Air quality	Not applicable this report period

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32	32	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.	Mobile sprinkler installed over stockpiles and used over disturbed areas if/when visible dust is generated.	Y	Air quality	Section 6.3
33	33	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.	Speed limit on site is 5km/hr or walking pace. Truck drivers also informed in induction.	Y	Air quality	Appendix O
34	34	The Applicant shall ensure that trucks are covered when entering and leaving the premises carrying loads of potentially dust generating material.	Trucks are covered when entering and leaving premises	Y	Air quality	Appendix O
<b>Air Quality Monitoring</b>	35	35	All monitoring equipment is to be installed and operational prior to commencement of construction.	Y	Air quality	Section 6.3
	36 (a)	36 (a)	Operation of dust deposition gauges and monitoring must be carried out in accordance with; (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.	Y	Air quality	Section 6.3
	36 (b)	36 (b)	(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.	Y		Section 6.3
	36 (c)	36 (c)	(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.	Y		Section 6.3
	37	37	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.	Y	Air quality	
<b>Limits on Extraction</b>	38(a)	38(a)	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	Y	Operations	Figure 4
	38(b)	38(b)	(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 <del>DPI Water</del> (DPIE Water).			Recent surveys show the site to be compliant

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 Non Compliant 10

Mod 2 Condition No.	Mod 4 Condition No.	Condition Text (Mod 4 changes shown in red text - active following 14/08/2021)	Details of compliance status	Compliant Y/N	Category	Where addressed in Annual Review	
<b>Groundwater Study and Remediation Works</b>	39(a)	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 <del>DPI-Water</del> (DPIE Water);	Peter Dundon engaged 30/3/16, approved by then DPI-W 10/5/16, approved by DPE 5/4/16.	Y	Soil and Water		
	39(b)	(b) consult with <del>DPI-Water</del> (DPIE Water)					
	39(c)	(c) examine all existing records of groundwater levels at the site;					
	39(d)	(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					
	39(e)	(e) provide advice and recommendations on the Groundwater Monitoring Program as set out in Condition 43.					
40	40	Unless otherwise agreed by the Secretary, the Applicant shall submit a report of the study to the Secretary and <del>DPI-Water</del> (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. 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.	Groundwater Study, Water Management Plan and Groundwater Monitoring Program approved	Y	Soil and Water		
41	41	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).	No areas below the groundwater level yet identified.	Y	Soil and Water	Not required	
<b>Water Management Plan</b>	42	42	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 <del>DPI-Water</del> (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 DPI-Water for three years from the date of approval of Modification 2 and thereafter as agreed with by the Secretary.	WMP dated 19/5/2022 approved 28/6/2022			Section 6.4 to 6.7

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Mod 2 Condition No.	Mod 4 Condition No.	Condition Text (Mod 4 changes shown in red text - active following 14/08/2021)	Details of compliance status	Compliant Y/N	Category	Where addressed in Annual Review
42(a)	42(a)	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: 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;				Section 6.6
42(b)	42(b)	(b) Surface Water Management Plan, that includes: • a detailed description of the surface water management system on site, including the: o clean water diversion systems; o erosion and sediment controls; o effluent irrigation system; o water transfers from the extraction areas; o water storages; and o discharge points;				
42(b)	42(b)	• design objectives and performance criteria for proposed: o erosion and sediment control structures; o water storages, including quarry voids; o site discharges; and o control of water pollution from rehabilitated areas of the site;				
42(b)	42(b)	• performance criteria, including trigger levels for investigating any potentially adverse impacts for surface water quality;				
42(b)	42(b)	• 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;				
42(b)	42(b)	• a plan to respond to any exceedances of the performance criteria, and mitigate and/or offset any adverse surface water impacts of the project;				
42(b)	42(b)	• long term water quality management objectives and the measures to achieve these objectives;				
42(b)	42(b)	• a plan that ensures surface stormwater runoff from the disturbed areas is directed to the sedimentation dam(s);				
42(b)	42(b)	• 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;				

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42(b)	42(b)	<ul style="list-style-type: none"> <li>a detailed description of design and construction criteria for the Process Water Dam based on a feasibility study of:                             <ul style="list-style-type: none"> <li>o capacity to construct multiple cells within the overall dam footprint (ie a two stage or three stage dam);</li> <li>o whether the dam floor and walls are able to be effectively lined with compacted clay (especially for multiple cells);</li> <li>o whether effective hydraulic separation can be achieved between such cells;</li> </ul> </li> </ul>		Y	Soil and Water	Section 6.7
42(b)	42(b)	<ul style="list-style-type: none"> <li>a strategy for the decommissioning of water management structures, including storage, sedimentation and leachate dams once extraction is complete; and</li> </ul>				
42(b)	42(b)	<ul style="list-style-type: none"> <li>audit and reporting procedures, including comparisons of the monitoring results each calendar year and quarterly reporting of surface water monitoring results;</li> </ul>	Updated WMP requires annual monitoring and reporting in Annual Report			Sections 6.4, 6.5
42(c)	42(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 (then DPI 2014), and includes: <ul style="list-style-type: none"> <li>detailed baseline data on groundwater yield and quality in groundwater bores on privately-owned land, that could be affected by the project;</li> </ul>				
42(c)	42(c)	<ul style="list-style-type: none"> <li>a program to undertake surveyed probe testing of all extracted areas where clay fines have been deposited to:                             <ul style="list-style-type: none"> <li>o accurately determine the depth of extraction and depth of clay fines;</li> <li>o identify any ongoing intersection or other interaction between clay fines and the regional groundwater aquifer;</li> <li>o 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</li> <li>o identify measures which can be successfully used in rehabilitating these areas;</li> </ul> </li> </ul>				
42(c)	42(c)	<ul style="list-style-type: none"> <li>a program to monitor potential groundwater quality impacts to the regional aquifer from receiving off-site runoff water in the Process Water Dam;</li> </ul>				
42(c)	42(c)	<ul style="list-style-type: none"> <li>groundwater assessment criteria, including trigger levels for investigating any potentially adverse groundwater impacts, in accordance with the NSW Aquifer Interference Policy;</li> </ul>				
42(c)	42(c)	<ul style="list-style-type: none"> <li>a program to monitor:                             <ul style="list-style-type: none"> <li>o the impacts of the project on:                                     <ul style="list-style-type: none"> <li>- groundwater inflows to water storages;</li> <li>- any groundwater bores on privately-owned land that could be affected by the project; and</li> </ul> </li> <li>o seepage from water storages or backfilled voids on site;</li> </ul> </li> </ul>				
42(c)	42(c)	<ul style="list-style-type: none"> <li>a plan to respond to any exceedances of the groundwater assessment criteria;</li> </ul>				

# Hodgsons Roberts Rd Sand Quarry Condition Compliance Summary January to December 2022

## DA Conditions

Compliant	67
Non Compliant	10

Mod 2 Condition No.	Mod 4 Condition No.	Condition Text (Mod 4 changes shown in red text - active following 14/08/2021)	Details of compliance status	Compliant Y/N	Category	Where addressed in Annual Review	
42(c)	42(c)	<ul style="list-style-type: none"> <li>emergency contingency plans for implementation in the event that the groundwater is encountered during excavation; and</li> </ul>					
42(c)	42(c)	<ul style="list-style-type: none"> <li>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.</li> </ul>					
<b>Groundwater Monitoring</b>	43	43	The Applicant shall prepare a Groundwater Monitoring Program for the development to the satisfaction of the Secretary. This program must:	GW Monitoring Program approved Aug 2018	Y	Soil and Water	
	43(a)	43(a)	(a) be prepared in consultation with DPI-Water and be submitted to the Secretary for approval within four months of the date of approval of Modification 2;	First submitted 23rd August 2016. Approved Aug 2018			
	43(b)	43(b)	(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;	Groundwater level monitored continuously at 7 locations			Section 6.5, Figure 3
	43(c)	43(c)	(c) include proposed construction to deepen (or replace) PT84MW1 in order that a bore in that general location monitors the regional aquifer; and	MW7			Figure 3
	43(d)	43(d)	(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.	MW9, MW13 (now mined out), MW12			Figure 3
	44	44	The results of the Groundwater Monitoring Program shall be reported the Department and <del>DPI-Water</del> (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.	GW Monitoring Program approved Aug 2018. Not reported to Dept 6 monthly	N	Soil and Water	Section 6.5
<b>Process Water Dam Design and Construction</b>	45	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).	Process Dam construction no longer required.	Y	Soil and Water	Section 6.7
<b>Noise Management Plan</b>	46	46	The Applicant shall prepare a Noise Management Plan as part of the EMP	A Noise Management Plan has been prepared as part of the OEMP and updated in 2016.			



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Non Compliant	10

Mod 2 Condition No.	Mod 4 Condition No.	Condition Text (Mod 4 changes shown in red text - active following 14/08/2021)	Details of compliance status	Compliant Y/N	Category	Where addressed in Annual Review	
46 (a)	46 (a)	The Noise Management Plan shall: (a) identify existing and potential noise sources and their relative contribution to noise impacts from the development;		Y	Noise		
46 (b)	46 (b)	(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;					
46 (c)	46 (c)	(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;					
46 (d)	46 (d)	(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;					
46 (e)	46 (e)	(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					
46 (f)	46 (f)	(f) contingency measures to be implemented should noise complaints be received.					
46 (g)	46 (g)	(g) provision for the notification of adjoining property owners of the commencement and duration of works adjoining the boundary;					
46 (h)	46 (h)	(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	Noise monitoring shows compliance with required noise criteria.				Section 6.8
46(i)	46(i)	(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 monitoring shows compliance with required noise criteria.				Section 6.8

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Mod 2 Condition No.	Mod 4 Condition No.	Condition Text (Mod 4 changes shown in red text - active following 14/08/2021)	Details of compliance status	Compliant Y/N	Category	Where addressed in Annual Review												
47		<p>For typical operations, noise from the premises must not exceed:</p> <ul style="list-style-type: none"> <li>an LAeq,15 min noise emission criterion of 43 dB(A) (7am to 6pm) Monday to Saturday;</li> <li>an LAeq,15 min noise emission criterion of 40 dB(A) (6am to 7am) Monday to Saturday; and</li> <li>an LA1,1 minute noise emission criterion of 50 dB(A) (6am to 7am) Monday to Saturday. 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).</li> </ul> <p>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."</p>		Y	Noise													
	47	<p><b>Noise Operating Conditions</b></p> <p>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.</p> <p>Table 2: Operational noise criteria dB(A)</p> <table border="1"> <thead> <tr> <th>Receiver</th> <th>Day (7am-6pm) Monday to Saturday LAeq (15 min)</th> <th>6am-7am Monday to Saturday LAeq (15 min)</th> <th>6am-7am Monday to Saturday LA1 (1 min)</th> </tr> </thead> <tbody> <tr> <td>Receiver B</td> <td>44</td> <td>40</td> <td>50</td> </tr> <tr> <td>All other receivers</td> <td>43</td> <td>40</td> <td>50</td> </tr> </tbody> </table> <p><small>*The Noise Assessment Locations referred to in Table 2 are shown in Appendix 2</small></p>	Receiver	Day (7am-6pm) Monday to Saturday LAeq (15 min)	6am-7am Monday to Saturday LAeq (15 min)	6am-7am Monday to Saturday LA1 (1 min)	Receiver B	44	40	50	All other receivers	43	40	50	Noise monitoring shows compliance with required noise criteria.			Section 6.8, Appendix L
Receiver	Day (7am-6pm) Monday to Saturday LAeq (15 min)	6am-7am Monday to Saturday LAeq (15 min)	6am-7am Monday to Saturday LA1 (1 min)															
Receiver B	44	40	50															
All other receivers	43	40	50															
47(a)	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.	No new equipment this report period			Section 6.8, Appendix L												
47(b)	47(b)	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.	Noise monitoring shows compliance with required noise criteria.	Y	Noise	Section 6.8, Appendix L												
47(c)	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.	No new equipment this report period			Section 6.8												

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Mod 2 Condition No.	Mod 4 Condition No.	Condition Text (Mod 4 changes shown in red text - active following 14/08/2021)	Details of compliance status	Compliant Y/N	Category	Where addressed in Annual Review	
47(d)	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.	No atypical works this report period			Not required	
<b>Road Noise Management Plan</b>	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.	Noise monitoring undertaken November 2022 shows compliance with required noise criteria.	Y	Traffic and Transport	Section 6.8, Appendix L	
	49	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.	Road Noise Management Plan has been prepared and approved in 2016.	Y	Traffic and Transport		
	50	<del>The Applicant shall ensure that truck movements associated with the development do not exceed 100 movements per day (50 laden truck movements) or 20 (10 laden truck movements) movements per hour, during construction or operation.</del> <b>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.</b>	Maximum laden trucks per day was 31, which equates to an average of 2.6 movements per hour.	Y	Traffic and Transport	Section 5.2	
		<b>50A (a)</b>	<b>The Applicant must prepare a Traffic Management Plan that must:</b> <b>(a) be prepared by suitably qualified and experienced person/s whose appointment has been endorsed by the Secretary;</b>	TMP Rev 4 dated 22/11/22 approved 13/12/22			Section 5.2
		<b>50A (b)</b>	<b>(b) be prepared in consultation with TfNSW and Council;</b>				

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Mod 2 Condition No.	Mod 4 Condition No.	Condition Text (Mod 4 changes shown in red text - active following 14/08/2021)	Details of compliance status	Compliant Y/N	Category	Where addressed in Annual Review
	50A (c)	(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.		Y	Traffic and Transport	
	50A (d)	(d) describe the measures to be put in place to ensure compliance with the Drivers' Code of Conduct; and				
	50A (e)	(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 for the approval of the Secretary by the 31 October 2021, or as otherwise agreed by the Secretary. The Applicant must implement the Traffic Management Plan as approved.				
51	51	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 proceeding 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.	Records indicate Section 94 contributions are paid.	Y	Administration	
Flora and Fauna	52	52	Deleted			

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Mod 2 Condition No.	Mod 4 Condition No.	Condition Text (Mod 4 changes shown in red text - active following 14/08/2021)	Details of compliance status	Compliant Y/N	Category	Where addressed in Annual Review
53	53	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 ( <i>Eucalyptus notabilis</i> ). This area shall be fenced off to prevent vehicles entering the area.	The areas have been maintained. The vegetation to the north of the site entrance is fenced off using electric fence and there is evidence that the access road is rehabilitating	Y	Flora and Fauna	Section 6.9
54	54	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.	Bundwalls have been constructed with minimal disturbance.	Y	Flora and Fauna	
<b>Flora and Fauna Management Plan</b>	55	The Applicant shall prepare a Flora and Fauna Management Plan as part of the EMP. The Plan shall be prepared in consultation with <del>National Parks and Wildlife Service</del> <b>Heritage NSW</b> and Council, and shall:	Flora and Fauna Management Plan has been prepared and updated in 2016. <del>OEH (NPWS)</del> <b>Heritage NSW</b> was consulted but declined to make comments. Council comments have been included in report. Report approved 9/12/16	Y	Flora and Fauna	
	55 a)	55 a)	(a) describe the characteristics and location of species, populations and communities that the proposal may impact upon;			
	55 b)	55 b)	(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			
	55 c)	55 c)	(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: <ul style="list-style-type: none"> <li>• post-extraction land use objectives for the site;</li> <li>• utilisation of local endemic species or species naturally occurring in the Maroota area;</li> <li>• planting around the conservation area to further buffer this area and enhance its long term viability as a bushland ecosystem;</li> <li>• 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;</li> <li>• provision of rocks of varying sizes to provide refuge and basking sites for herpetofauna;</li> <li>• fencing of revegetated areas to prohibit grazing by stock; and</li> <li>• provision of artificial nest boxes for a range of arboreal fauna.</li> </ul>			
	55 d)	55 d)	(d) mitigation measures to be implemented should operations compromise the significant flora and fauna communities identified in the EIS;			

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55 e)	55 e)	(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					
55 f)	55 f)	(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.					
56	56	The Applicant shall maintain the revegetated areas for the duration of the Consent. Maintenance may include: <ul style="list-style-type: none"> <li>• replanting failed or unsatisfactory areas</li> <li>• repairing erosion problems</li> <li>• fire management – fire suppression or fire encouragement</li> <li>• pest and weed control</li> <li>• control of feral animal populations</li> <li>• maintain and repair fencing</li> <li>• fertiliser application</li> <li>• watering plants in drier areas, especially in the establishment phase</li> <li>• application of lime or gypsum to control pH and improve soil structure.</li> </ul>	Monitoring of the remnant vegetation was undertaken in October 2022	Y	Flora and Fauna	Sections 6.9 and 6.10	
<b>Heritage</b>	57	57	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 NPWS, the Heritage Office <del>Heritage NSW</del> , and the Local Aboriginal Land Councils. Any necessary permits or consents shall be obtained and complied with prior to recommencement of work.	No heritage or archaeological sites have been located	Y	Heritage	Not required
<b>Rehabilitation Objectives</b>	58	58	The Applicant shall rehabilitate the site in a manner that is consistent with the final landform designs in Appendix 1 to the satisfaction of the Secretary. <del>This</del> All rehabilitation must comply with the objectives in Table 1:	Rehabilitation Plan approved August 2018. Not updated for new final landform			Section 6.10
	Table 1	Table 1	Site (as a whole) <ul style="list-style-type: none"> <li>• Safe, stable and non-polluting</li> <li>• Final landform integrated with surrounding natural landforms as far as is reasonable and feasible, and minimising visual impacts when viewed from surrounding land</li> </ul>				Section 6.10
	Table 1	Table 1	Surface Infrastructure <ul style="list-style-type: none"> <li>• Decommissioned and removed, unless the Secretary agrees otherwise</li> </ul>				Section 6.10
	Table 1	Table 1	Quarry Benches <ul style="list-style-type: none"> <li>• Landscaped and vegetated using native tree and understorey species</li> </ul>				Section 6.10

Landscape and

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Table 1	Table 1	Quarry Pit Floor • Landscaped and revegetated using improved pasture species, native trees and understorey species		N	Landscape and Rehabilitation	Section 6.10	
Table 1	Table 1	Final Void • Minimise the height and slope of batters • Minimise the drainage catchment				Section 6.10	
Table 1	Table 1	Community • Ensure public safety • Minimise the adverse socio-economic effects of quarry closure				Section 6.10	
	Table 1	<b>Water Quality</b> • Water retained on the site is fit for the intended post-mining land use/s • Water discharged from the site is suitable for receiving water and fit for aquatic ecology and riparian vegetation	Testing of dam water will confirm that it meets ANZECC Guidelines for 90% protection level for fresh ecosystems.			WMP	
<b>Progressive Rehabilitation</b>	59	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.	Dust monitoring indicates compliance with required levels.	Y	Landscape and Rehabilitation	Section 6.3 and 6.10
<b>Landscape and Rehabilitation Management Plan</b>	60(a)	60(a)	The Applicant shall prepare a Landscape and Rehabilitation Management Plan for the development to the satisfaction of the Secretary. This plan must: (a) be submitted to the Secretary for approval by 30 June 2017, unless otherwise agreed by the Secretary;	Rehabilitation Plan approved August 2018			
	60(b)	60(b)	(b) provide details of the conceptual final landform and associated land uses for the site;				
	60(c)	60(c)	(c) 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;				

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60(d)	60(d)	(d) 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: <ul style="list-style-type: none"> <li>• maximising the salvage of environmental resources within the approved disturbance area for beneficial reuse;</li> <li>• protecting vegetation and fauna habitat outside the approved disturbance area on-site;</li> <li>• minimising the impacts on native fauna;</li> <li>• landscaping the site to minimise visual and lighting impacts;</li> <li>• reviewing improved pasture species and application rates;</li> <li>• controlling weeds and feral pests;</li> <li>• controlling erosion;</li> <li>• controlling access; and</li> <li>• bushfire management;</li> </ul>		Y	Landscape and Rehabilitation	
60(e)	60(e)	(e) include a program to monitor and report on the effectiveness of these measures, and progress against the performance and completion criteria;				Sections 6.9 and 6.10
60(f)	60(f)	(f) include a mass balance calculation to ensure that appropriate volumes of material are available to implement the final landform as described in this plan;				
60(g)	60(g)	(g) provide for the construction and maintenance of the process water dam in accordance with the approved design and construction criteria (see Condition 42(b));				
60(h)	60(h)	(h) 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				
60(i)	60(i)	(i) 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				
61	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:	Approval of expert received 2nd November 2021, and the expert engaged in January 2022. Job on hold		Landscape and Rehabilitation	Section 8.2
61(a)	61(a)	(a) calculating the cost of rehabilitating the site taking into account the likely surface disturbance over the following 3 years of quarrying operations; and		N		



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61(b)	61(b)	(b) 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.			Rehabilitation	
62	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:	Approval of expert received 2nd November 2021, and the expert engaged in January 2022. Job on hold	N	Landscape and Rehabilitation	Section 8.2
62(a)	62(a)	(a) effects of inflation;				
62(b)	62(b)	(b) likely cost of rehabilitating the site (taking into account the likely surface disturbance over the next 3 years of the development); and				
62(c)	62(c)	(c) performance of the implementation of the rehabilitation of the site to date.				
<b>Environmental Management Strategy</b>	63	The Applicant shall prepare an Environmental Management Strategy for the development to the satisfaction of the Secretary. This strategy must: (a) be submitted to the Secretary for approval by 30 June 2016;	Revised Strategy submitted 25/11/2016, approved 9/12/16	Y	Administration	
	63 (b)	(b) provide the strategic framework for environmental management of the development;				
	63 (c)	(c) identify the statutory approvals that apply to the development;				
	63 (d)	(d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the development;				
	63 (e)	(e) describe the procedures that would be implemented to: <ul style="list-style-type: none"> <li>• keep the local community and relevant agencies informed about the operation and environmental performance of the development;</li> <li>• receive, handle, respond to, and record complaints;</li> <li>• resolve any disputes that may arise during the course of the development;</li> <li>• respond to any non-compliance;</li> <li>• respond to emergencies; and</li> </ul>				
	63 (f)	(f) include: <ul style="list-style-type: none"> <li>• copies of any strategies, plans and programs approved under the conditions of this consent; and</li> <li>• a clear plan depicting all the monitoring required to be carried out in relation to the development.</li> </ul>				

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<b>Adaptive Management</b>	64	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.	Exceedance of Dust Deposition criteria. No action required	N	Administration	Section 6.3
<b>Management Plan Requirements</b>	65 (a)	65 (a) 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;	Current plans and approvals available at <a href="http://www.vgt.com.au/hodgsons">www.vgt.com.au/hodgsons</a>	Y	Administration	
	65 (b)	65 (b) (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;				
	65 (c)	65 (c) (c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;				
	65 (d)	65 (d) (d) a program to monitor and report on the: • impacts and environmental performance of the development; • effectiveness of any management measures (see c above);				
	65 (e)	65 (e) (e) a contingency plan to manage any unpredicted impacts and their consequences;				
	65 (f)	65 (f) (f) a program to investigate and implement ways to improve the environmental performance of the development over time;				
	65 (g)	65 (g) (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				
	65 (h)	65 (h) (h) a protocol for periodic review of the plan.				

# Hodgsons Roberts Rd Sand Quarry Condition Compliance Summary January to December 2022

## DA Conditions

Compliant	67
Non Compliant	10

	Mod 2 Condition No.	Mod 4 Condition No.	Condition Text (Mod 4 changes shown in red text - active following 14/08/2021)	Details of compliance status	Compliant Y/N	Category	Where addressed in Annual Review
<b>Annual Review</b>	66	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:	Compliance Report 2022 version F0 submitted 30/03/2022, DPE acceptance response received 16/05/2022.	Y	Administration	
	66 (a)	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;				Section 5, Section 6.10
	66 (b)	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: <ul style="list-style-type: none"> <li>• relevant statutory requirements, limits or performance measures/criteria;</li> <li>• monitoring results of previous years; and</li> <li>• relevant predictions in the EIS, Modification 1 and Modification 2;</li> </ul>				Section 6
	66 (c)	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, 6 and Appendix A
	66 (d)	66 (d)	(d) identify any trends in the monitoring data over the life of the development;				Section 6
	66 (e)	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
	66 (f)	66 (f)	(f) describe what measures will be implemented over the next year to improve the environmental performance of the development.				Sections 6, 7, and 8
<b>Revision of Strategies, Plans and Programs</b>	67	67	Within 3 months of the submission of: <ul style="list-style-type: none"> <li>(a) an annual review under Condition 66 above;</li> <li>(b) an incident report under Condition 68 below;</li> <li>(c) an audit report under Condition 70 below; or</li> <li>(d) any modification to the conditions of this Consent (unless the conditions require otherwise),</li> </ul> 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.	Only Surface Water MP and Transport MP updated following Mod 4	N	Administration	Due 3 months from approval of this report

# Hodgsons Roberts Rd Sand Quarry Condition Compliance Summary January to December 2022

## DA Conditions

Compliant	67
Non Compliant	10

Mod 2 Condition No.	Mod 4 Condition No.	Condition Text (Mod 4 changes shown in red text - active following 14/08/2021)	Details of compliance status	Compliant Y/N	Category	Where addressed in Annual Review
<b>Incident Reporting Notification</b>	68	<p>The Applicant shall immediately notify the Secretary and any other relevant agencies of any incident. Within 7 days of the date of the incident, the Applicant shall provide the Secretary and any relevant agencies with a detailed report on the incident, and such further reports as may be requested. <del>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.</del></p>	Insoluble Solids Annual Average exceedance April to Nov 22. Notified 19/4/22 via Major Projects Portal. No action required	Y	Administration	6.3.3.2
	68A	<p>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.</p>	Insoluble Solids Annual Average exceedance April to Nov 22. Notified 19/4/22 via Major Projects Portal. No action required	Y	Administration	6.3.3.2
<b>Regular Reporting</b>	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.	<a href="http://www.vgt.com.au/hodgsons">www.vgt.com.au/hodgsons</a>	Y	Administration	Section 5.4
<b>Independent Environmental Audit</b>	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:	Independent Environmental Audit due 2023	Y	Administration	
	70 (a)	(a) be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary; Note: This audit team must be led by a suitably qualified auditor and include experts in any field specified by the Secretary.	Auditor James Hart approved 10/2/2023			
	70 (b)	(b) include consultation with the relevant agencies;				
	70 (c)	(c) 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);				
	70 (d)	(d) review the adequacy of strategies, plans or programs required under the abovementioned approvals; and				
	70 (e)	(e) 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.				

# Hodgsons Roberts Rd Sand Quarry Condition Compliance Summary January to December 2022

## DA Conditions

Compliant	67
Non Compliant	10

Mod 2 Condition No.	Mod 4 Condition No.	Condition Text (Mod 4 changes shown in red text - active following 14/08/2021)	Details of compliance status	Compliant Y/N	Category	Where addressed in Annual Review
71	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.		Y	Administration	
Access to Information	72	By 30 June 2016 the Applicant shall: (a) make copies of the following publicly available on its website: <ul style="list-style-type: none"> <li>• the documents identified in Condition 2(a) above;</li> <li>• current statutory approvals for the development;</li> <li>• approved strategies, plans and programs required under the conditions of this Consent;</li> <li>• 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;</li> <li>• a complaints register, which is to be updated monthly;</li> <li>• the annual reviews of the development (for the last 5 years, if applicable);</li> <li>• any independent environmental audit of the development, and the Applicant's response to the recommendations in any audit;</li> <li>• any other matter required by the Secretary; and(b) keep this information up-to-date, to the satisfaction of the Secretary.</li> </ul>	<a href="http://www.vgt.com.au/hodgsons">www.vgt.com.au/hodgsons</a>	Y	Administration	

# Hodgsons Roberts Rd Sand Quarry Condition Compliance Summary January to December 2021

## EPL Licence no. 6535

Compliant

Non Compliant

Compliance Summary Number of Conditions Non-compliant		Details of compliance status
Non Compliant	Nil.	
Condition	Condition Text	Details of compliance status
<b>Administrative Conditions</b>		
<b>A1.1</b>	Crushing Grinding or Separating not to exceed 100000-500000T processed p/a. Extractive Activities no to exceed 100000-500000T extracted, processed or stored.	Crushing grinding or separating does not exceed this limit.
<b>A2.1</b>	Licence applies to the following premises: HB Maroota Pty Ltd, Cnr Roberts & Old Northern Roads, Maroota, NSW 2756, Lot 1 DP 228308, Lot 2 DP 228308, Lot 2 DP 313327	Compliant
<b>A3.1</b>	Licence applies to all other activities carried on at the premises, including agricultural produce industries and aircraft (helicopter) facilities	Compliant
<b>A4.1</b>	Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence. In this condition the reference to "the licence application" includes a reference to: a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.	Compliant
<b>Discharges to Air and Water and Applications to Land</b>		
<b>P1.1</b>	The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area (no table included)	N/A

# Hodgsons Roberts Rd Sand Quarry Condition Compliance Summary January to December 2021

EPL Licence no. 6535

Compliant

Non Compliant

Compliance Summary Number of Conditions Non-compliant		Details of compliance status
Non Compliant	Nil.	
Condition	Condition Text	Details of compliance status
<b>Limit Conditions</b>		
L1.1	(Pollution of Water) 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	No waters have been polluted
L2.1	Noise from the premises must not exceed the sound pressure level expressed as LA10 (15 minute) of 45 dB(A), except as expressly provided by this licence	Noise monitoring indicates compliance
L2.2	Noise from the premises is to be measured or computed at any point within one metre of any residential boundary, or at any point within 30 metres of the dwelling where the dwelling is more than 30 metres from the boundary, to determine compliance with the noise level limits in Condition L2.1	Noise monitoring indicates compliance
<b>Operating Conditions</b>		
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.	Compliant
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.	Drums of oils stored in the workshop were banded with rolls in October 2020
O3.1	The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.	Dust monitoring results illustrate compliance
O3.2	All loaded trucks entering or leaving the premises must have their loads covered.	Trucks are covered when entering and leaving premises
O4.1	The licensee must prevent any tracking of mud on to public roads by vehicles leaving the premises.	Haul road is sealed from road to weighbridge. Water used to clean off road area as required.
<b>Monitoring and Recording Conditions</b>		
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.	All required monitoring has been recorded and retained.

# Hodgsons Roberts Rd Sand Quarry Condition Compliance Summary January to December 2021

EPL Licence no. 6535

Compliant

Non Compliant

Compliance Summary Number of Conditions Non-compliant		Details of compliance status
Non Compliant	Nil.	
Condition	Condition Text	Details of compliance status
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.	All required monitoring has been recorded and retained.
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.	"Samples" not required by this licence. Date, time, location and technician undertaking noise monitoring has been included in the noise monitoring report.
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.	No complaints have been made. Log book is maintained on site and reported on website
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.	Complaints register
M2.3	The record of a complaint must be kept for at least 4 years after the complaint was made.	Complaints Register
M2.4	The record must be produced to any authorised officer of the EPA who asks to see them.	No complaints have been made. Log book is maintained on site and reported on website
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.	Complaints phone number is advertised in the white pages and signage at the front gate.



# Hodgsons Roberts Rd Sand Quarry Condition Compliance Summary January to December 2021

## EPL Licence no. 6535

Compliant

Non Compliant

Compliance Summary Number of Conditions Non-compliant		Details of compliance status
Non Compliant	Nil.	
Condition	Condition Text	Details of compliance status
<b>M3.2</b>	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.	Complaints phone number is advertised in the white pages, website and signage at the front gate.
<b>M3.3</b>	The preceding two conditions do not apply until 3 months after: the date of the issue of this licence	N/A

# Hodgsons Roberts Rd Sand Quarry Condition Compliance Summary January to December 2021

## EPL Licence no. 6535

Compliant

Non Compliant

Compliance Summary Number of Conditions Non-compliant		Details of compliance status
Non Compliant	Nil.	
Condition	Condition Text	Details of compliance status
<b>Reporting Conditions</b>		
<b>R1.1</b>	The licensee must complete and supply to the EPA an Annual Return in the approved form comprising: a) a Statement of Compliance; and b) a Monitoring and Complaints Summary. At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA	Completed annually. Reporting period ends 11 March
<b>R1.2</b>	An Annual Return must be prepared in respect of each reporting period, except as provided below	Completed annually. Reporting period ends 11 March
<b>R1.3</b>	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.	N/A
<b>R1.4</b>	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.	N/A
<b>R1.5</b>	The Annual Return for the reporting period must be supplied to the EPA 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').	Lodged 8th April 2021.
<b>R1.6</b>	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	Digital copies retained

# Hodgsons Roberts Rd Sand Quarry Condition Compliance Summary January to December 2021

**EPL Licence no. 6535**

Compliant

Non Compliant

Compliance Summary Number of Conditions Non-compliant		Details of compliance status
Non Compliant	Nil.	
Condition	Condition Text	Details of compliance status
<b>R1.7</b>	Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints 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.	Completed annually. Reporting period ends 11 March
<b>Notification of Environmental Harm</b>		
<b>R2.1</b>	Notifications must be made by telephoning the Environment Line service on 131 555	PIRMP
<b>R2.2</b>	The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.	PIRMP
<b>Written Report</b>		
<b>R3.1</b>	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.	N/A
<b>R3.2</b>	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	N/A

# Hodgsons Roberts Rd Sand Quarry Condition Compliance Summary January to December 2021

**EPL Licence no. 6535**

Compliant

Non Compliant

Compliance Summary Number of Conditions Non-compliant		Details of compliance status
Non Compliant	Nil.	
Condition	Condition Text	Details of compliance status
<b>R3.3</b>	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.	N/A
<b>R3.4</b>	The EPA may make a written request for further details in relation to any of the above matters if it is not 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.	N/A
<b>General Conditions</b>		
<b>G1.1</b>	A copy of this licence must be kept at the premises to which the licence applies.	Printed copy is in the site office
<b>G1.2</b>	The licence must be produced to any authorised officer of the EPA who asks to see it.	Printed copy is in the site office
<b>G1.3</b>	The licence must be available for inspection by any employee or agent of the licensee working at the premises.	Printed copy is in the site office

# Hodgsons Roberts Rd Sand Quarry Condition Compliance Summary January to December 2021

## Monitoring Bore Licences

Compliant

Non Compliant

Bore Name	Licence Number	Date Commenced	Valid to	Purpose	Cond #	Condition Text	Details of compliance status
<b>Compliance Summary</b>				<b>Number of Conditions Non-compliant</b>			
Non Compliant				Nil			
PT84MW1	10BL158808	12/11/1998	Perpetuity	Monitoring Bore		All works licences have the same conditions	Compliant
PT84MW5	10BL158808	12/11/1998	Perpetuity	Monitoring Bore			
PT84MW6	10BL605696	13/01/2015	Perpetuity	Monitoring Bore			
PT84MW7	10BL605799	29/08/2016	Perpetuity	Monitoring Bore			
PT84MW8	10BL605795	29/08/2016	Perpetuity	Monitoring Bore			
PT84MW9	10BL605799	29/08/2016	Perpetuity	Monitoring Bore			
PT84MW10	10BL605798	29/08/2016	Perpetuity	Monitoring Bore			
PT84MW11	10BL605797	29/08/2016	Perpetuity	Monitoring Bore			
PT84MW12	10BL605799	29/08/2016	Perpetuity	Monitoring Bore			
PT84MW13	10BL605799	29/08/2016	Perpetuity	Monitoring Bore			

# Hodgsons Roberts Rd Sand Quarry Condition Compliance Summary January to December 2021

## Monitoring Bore Licences

Compliant

Non Compliant

Bore Name	Licence Number	Date Commenced	Valid to	Purpose	Cond #	Condition Text	Details of compliance status
					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	Latest works commenced December 2016
					2	The licensee shall within two months of completion or after the issue of the licence if the work is existing, furnish to NSW Office of Water:-	Mar-17
					a	Details of the work set out in the attached for "A" (must be completed by the driller)	Forms received from driller and sent NOW March 2017
					b	A plan accurately showing the location of the work, in relation to portion and property boundaries	Sent to NOW March 2017
					c	A one litre sample for all licences other than those for stock, domestic, test bores and farming purposes	Test bore, therefore not required
					d	Details of any water analysis and/or pumping tests	N/A
					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.	Access available
					4	If during the construction of the work, saline or polluted water is encountered above the producing aquifer, such water shall be sealed off.	Not encountered
					5a	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	Not flowing
					5b	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.	Not flowing
					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 the aquifer.	In use
					7	The licensee shall not allow any tailwater / drainage to discharge into or onto:- any adjoining property; any other persons land; any Crown land; any river, creek or watercourse; any native vegetation as described under the Native Vegetation Conservation Act; any Wetlands of environmental significance	Compliant
					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.	No conveying, distributing or storing water applicable

# Hodgsons Roberts Rd Sand Quarry Condition Compliance Summary January to December 2021

## Monitoring Bore Licences

Compliant

Non Compliant

Bore Name	Licence Number	Date Commenced	Valid to	Purpose	Cond #	Condition Text	Details of compliance status
					9	If the bore authorised by this license is lined with steel or plastic casing the inside diameter of that casing shall not exceed 2200mm	Casing 65mm plastic
					10	Water shall not be pumped from the bore authorised by this license for any purpose other than groundwater investigation	Compliant
					11	Subject to condition (12) the licensee shall within two months of the date of completion of the bore authorised by the license: Backfill it with clay or cement to groundlevel, after withdrawing any casing (lining) or render it ineffective by any other means acceptable to the department	See condition 12
					12	Condition (11) shall have no force or effect if: 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 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.	Test bore, casing 65mm

# Hodgsons Roberts Rd Sand Quarry Condition Compliance Summary January to December 2021

## Work Approval 10WA114817 Water Access Licence WAL 24163 for PT84PB1: Plant Usage Bore

Compliant

Non Compliant

### Work Approval 10WA114817 and Water Access Licence WAL 24163 Ref 10AL114816 Conditions

Number	Text	Compliance Status
<b>Compliance Summary</b>	<b>Number of Conditions Non-compliant</b>	
Non Compliant	Nil	
<b>Information</b>		
Source	Maroota Tertiary Sands Groundwater Source	
Tenure Type	Continuing	
Share	45.00 ML	Take for 2022 = 11.27 ML
<b>Take of water</b>		
MW092900001	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.	Not located within 40m of a river
MW060400001	Water allocations remaining in the account for this access licence must not be carried over from one water year to the next water year.	
MW060500001	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.	
MW060300001	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 recredited by the Minister to the account.	
<b>Monitoring and recording</b>		
MW233800001	The completed logbook must be retained for five (5) years from the last date recorded in the logbook.	
MW233600001	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.	



# Hodgsons Roberts Rd Sand Quarry Condition Compliance Summary January to December 2021

## Work Approval 10WA114817 Water Access Licence WAL 24163 for PT84PB1: Plant Usage Bore

Compliant

Non Compliant

### Work Approval 10WA114817 and Water Access Licence WAL 24163 Ref 10AL114816 Conditions

Number	Text	Compliance Status
MW233700001	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.	
MW060600001	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.	
MW233900001	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.	

# Hodgsons Roberts Rd Sand Quarry Condition Compliance Summary January to December 2021

## Work Approval 10WA114817 Water Access Licence WAL 24163 for PT84PB1: Plant Usage Bore

Compliant

Non Compliant

### Work Approval 10WA114817 and Water Access Licence WAL 24163 Ref 10AL114816 Conditions

Number	Text	Compliance Status
<b>Reporting</b>		
MW005100002	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.	
<b>Take of Water</b>		
MW065500001	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.	
<b>Water management works</b>		
MW009700001	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.	No contamination found
MW048700001	The water supply work authorised by this approval must be constructed within three (3) years from the date this approval is granted.	Constructed 6/7/1999
MW004400001	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.	In use
<b>Monitoring and recording</b>		
MW048100001	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.	Logbook kept
MW048200001	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.	Logbook kept
<b>Reporting</b>		

# Hodgsons Roberts Rd Sand Quarry Condition Compliance Summary January to December 2021

## Work Approval 10WA114817 Water Access Licence WAL 24163 for PT84PB1: Plant Usage Bore

Compliant

Non Compliant

### Work Approval 10WA114817 and Water Access Licence WAL 24163 Ref 10AL114816 Conditions

Number	Text	Compliance Status
MW005100001	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.	N/A
MK048500001	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.	Constructed 6/7/1999
<b>Take of water</b>		
DK031600128	The approval holder must not take water from the approved work at a rate that exceeds 3.0 L/second (180L/min).	Compliant
<b>Water management works</b>		
DK136300001	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.	No obstruction to floodwaters, rivers or natural lake
DK120200001	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 subsurface water.	

# Hodgsons Roberts Rd Sand Quarry Condition Compliance Summary January to December 2021

## Water Access Licence WAL 26163 for PT84PB2: Land Owners Bore, not used for quarry operations

Compliant

Non Compliant

Number	Text	Compliance Status
<b>Compliance Summary</b>	<b>Number of Conditions Non-compliant</b>	
Non Compliant	Nil	
<b>Information</b>		
Source	Maroota Tertiary Sands Groundwater Source	
Tenure Type	Continuing	
Share	264.00 ML	
<b>Take of water</b>		
MW092900001	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.	Not located within 40m of a river
MW060400001	Water allocations remaining in the account for this access licence must not be carried over from one water year to the next water year.	
MW060500001	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.	
MW060300001	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 recredited by the Minister to the account.	
<b>Monitoring and recording</b>		
MW233800001	The completed logbook must be retained for five (5) years from the last date recorded in the logbook.	
MW233600001	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.	

# Hodgsons Roberts Rd Sand Quarry Condition Compliance Summary January to December 2021

## Water Access Licence WAL 26163 for PT84PB2: Land Owners Bore, not used for quarry operations

Compliant

Non Compliant

Number	Text	Compliance Status
MW233700001	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.	
MW060600001	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.	
MW233900001	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.	

# Hodgsons Roberts Rd Sand Quarry Condition Compliance Summary January to December 2021

## Water Access Licence WAL 26163 for PT84PB2: Land Owners Bore, not used for quarry operations

Compliant

Non Compliant

Number	Text	Compliance Status
<b>Reporting</b>		
MW005100002	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.	
<b>Take of Water</b>		
MW065500001	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.	
<b>Water management works</b>		
MW009700001	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.	No contamination found
MW048700001	The water supply work authorised by this approval must be constructed within three (3) years from the date this approval is granted.	Constructed 6/7/1999
MW004400001	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.	In use
<b>Monitoring and recording</b>		
MW048100001	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.	Logbook kept - site owner, not quarry
MW048200001	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.	Logbook kept - site owner, not quarry
<b>Reporting</b>		

# Hodgsons Roberts Rd Sand Quarry Condition Compliance Summary January to December 2021

## Water Access Licence WAL 26163 for PT84PB2: Land Owners Bore, not used for quarry operations

Compliant

Non Compliant

Number	Text	Compliance Status
MW005100001	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.	N/A
MK048500001	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.	Constructed 6/7/1999
<b>Take of water</b>		
DK031600128	The approval holder must not take water from the approved work at a rate that exceeds 3.0 L/second (180L/min).	Compliant
<b>Water management works</b>		
DK136300001	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.	No obstruction to floodwaters, rivers or natural lake
DK120200001	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 subsurface water.	

A solid green rectangular graphic element positioned to the left of the 'Appendix B' text.

## Appendix B

# Notice of Modification and draft Consolidated Consent Conditions Mod 4



# Notice of Modification

## Section 4.55(2) of the *Environmental Planning and Assessment Act 1979*

As delegate for the Minister for Planning and Public Spaces, I modify the development consent referred to in Schedule 1, as set out in Schedule 2.



Carl Dumpleton  
A/Director Resource Assessments

Sydney

13 August 2021

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### SCHEDULE 1

The Development Consent (DA 267-11-99) for the Roberts Road Quarry, granted by the Minister for Urban Affairs and Planning on 31 May 2000.

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### SCHEDULE 2

1. In the list of definitions, delete “Department”, “DPI Water”, “National Parks and Wildlife Service” and insert the following in alphabetical order:

BCD	Biodiversity and Conservation Division within the Department
Calendar year	A period of 12 months from 1 January to 31 December
Department	Department of Planning, Industry and Environment
DPIE Water	The Water Group within the Department
ENM	Excavated Natural Material, as defined in the EPA’s resource recovery orders and exemptions clauses 91, 92 and 93 of the <i>Protection of the Environment Operations (Waste) Regulation 2014</i>
EPL	Environment Protection Licence under the POEO Act
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>
Laden Trucks	Trucks transporting quarry products from the site and/or trucks transporting VENM/ENM to the site
MEG	Regional NSW – Mining, Exploration and Geoscience
Minister	NSW Minister for Planning and Public Spaces, or delegate
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: <ul style="list-style-type: none"><li>revised noise assessment titled: <i>Noise Impact Assessment Rev 1</i>, dated May 2020 prepared by Umwelt Environmental Consulting;</li><li>letter from Umwelt Environmental Consulting, dated 20 May 2020; and</li><li>letter from Benbow Environmental, dated 10 September 2020.</li></ul>
Non-compliance	An occurrence, set of circumstances or development that is a breach of this consent
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
Quarrying products	Includes all saleable quarry products, but excludes tailings, other wastes and material needed for rehabilitation
Secretary	Planning Secretary under the EP&A Act, or nominee
TfNSW	Transport for NSW

VENM  
Waste

Virgin Excavated Natural Material, as defined in the POEO Act  
Has the same meaning as the definition of the term in the Dictionary to the  
POEO Act

2. Delete all references to "DPI-Water" and replace with "DPIE Water".
3. Delete all references to "National Parks and Wildlife Service", "NPWS" and "Heritage Office" and replace with "Heritage NSW".
4. In condition 2(a) of Schedule 2, delete "Modification 3 and Modification 2" and replace with "Modification 2, Modification 3 and Modification 4".
5. In the heading of condition 8 of Schedule 2, delete "Commencement and duration" and replace with "Limits on Approval".
6. In condition 9 of Schedule 2 delete "2025" and replace with "2030".
7. After condition 9, of Schedule 2 insert the following:

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.

8. After condition 17 insert the following:

#### **PRODUCTION DATA**

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.

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).

9. In condition 20 of Schedule 2:
  - a. delete the "g" in clause 20(g) and replace with "h";
  - b. delete the "f" in clause 20(f) and replace with "g"; and
  - c. after condition 20(e), insert "(f) the Traffic Management Plan (Condition 50A)".
10. Before condition 27 insert the following:

#### **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 details of the origin, date, and quantity received; and
- (c) include a copy of this data in the Annual Review.

11. In condition 27, delete the contents of the condition and replace with:

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*.

12. In condition 28 of Schedule 2, delete the contents of the condition and replace with:

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.

**Table 1:** Air quality criteria

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

**Notes:**

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

<sup>b</sup> Incremental impact (i.e. incremental increase in concentrations due to the development on its own).

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

<sup>d</sup> 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*.

13. After condition 28 of Schedule 2, insert the following:

28A. The air quality criteria in Table 1 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.

14. In condition 29(c) of Schedule 2, after “to ensure that areas”, insert “of the site which are exposed and active at any one time are minimised to the greatest extent practicable”.

15. After condition 29 of Schedule 2, insert the following:

29A. The Applicant must commission an expert review of the air quality monitoring system at the site. This review must:

- be undertaken by a suitably qualified and experience person(s) whose appointment has been approved by the Secretary;
- review the accuracy of the air quality monitoring system 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<sub>2.5</sub> monitoring;
- provide recommendations (where required) to improve the accuracy of air quality monitoring system at the site; and
- 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 30 November 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.

16. Delete the contents of condition 47 of Schedule 2 and insert the following:

**Noise Operating Conditions**

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 2:** Operational noise criteria dB(A)

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

<sup>a</sup>The Noise Assessment Locations referred to in Table 2 are shown in Appendix 2

17. Delete the contents of Condition 50 of Schedule 2 and insert the following:

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.

18. After Condition 50 of Schedule 2, Insert the following:

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

19. In condition 58 of Schedule 2:

- after "rehabilitate the site", insert "in a manner that is consistent with the final landform designs in Appendix 1,";
- After "satisfaction of the Secretary." delete "This" and replace with "All"; and
- In Table 1: Rehabilitation Objectives, delete the row and contents for "Quarry Benches".
- In Table 1: Rehabilitation Objectives, add the following row as the last row:

Water Quality	<ul style="list-style-type: none"><li>• Water retained on the site is fit for the intended post-mining land use/s</li><li>• Water discharged from the site is suitable for receiving waters and fit for aquatic ecology and riparian vegetation</li></ul>
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20. In condition 68 of Schedule 2, delete the contents of the condition and replace with:

**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.

21. After condition 68 of Schedule 2, insert the following:

**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.

22. After condition 72 of Schedule 2 insert the following:

# APPENDIX 1 FINAL LANDFORM DESIGN

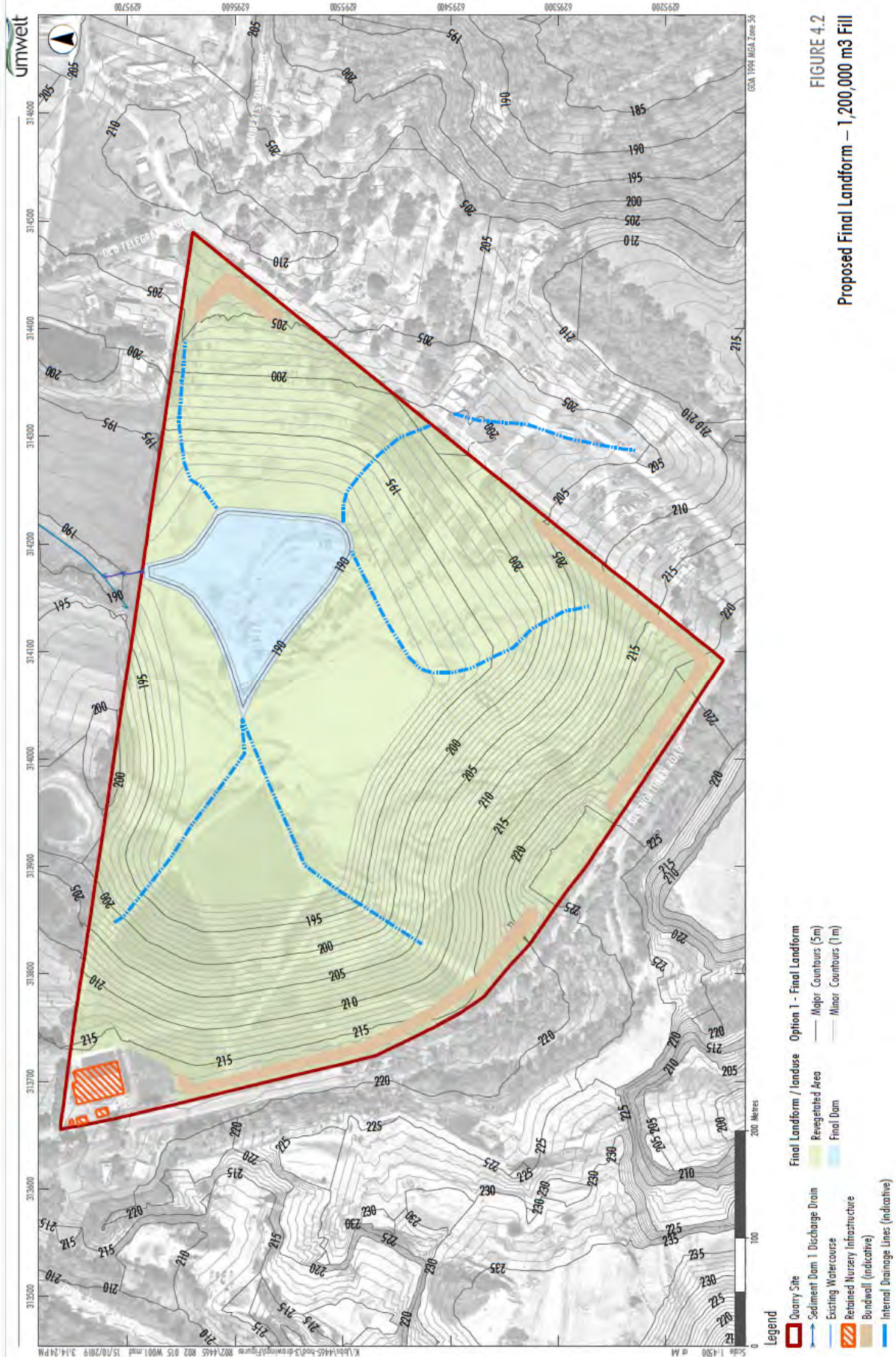


FIGURE 4.2  
Proposed Final Landform – 1,200,000 m3 Fill

Figure 1: Final Landform Concept 1

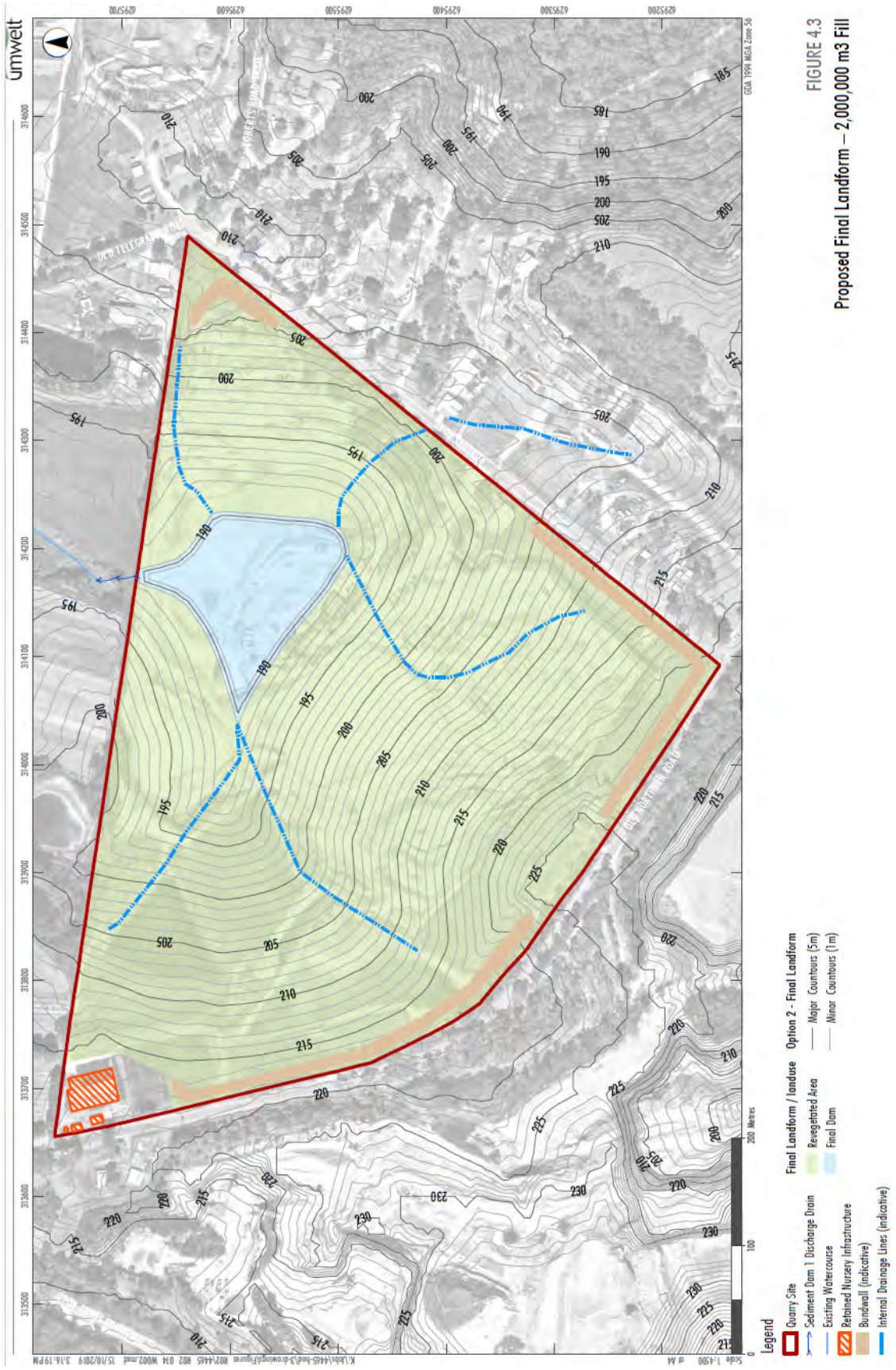


FIGURE 4.3  
Proposed Final Landform – 2,000,000 m3 Fill

Figure 2: Final Landform Concept 2

## APPENDIX 2 RECEIVER LOCATION PLAN



FIGURE 3.1  
Noise Assessment Receivers

End of Modification

**ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979**

**DETERMINATION OF A DEVELOPMENT APPLICATION UNDER SECTION 80(1) OF THE ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979**

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.

The reason for the imposition of conditions is to minimise any adverse environmental effects of the development, consistent with the objectives of the Act.

Andrew Refshauge MP  
**Minister for Urban Affairs and Planning**

Sydney 2000 File No. S98/00772

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**SCHEDULE 1**

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 1 in 29 November 2000 (marked red).**

**This instrument includes changes made by DA 267-11-99 Mod 3 in 18 August 2015 (marked blue).**

**This instrument includes changes made by DA 267-11-99 Mod 2 in 18 March 2016 (marked green).**

**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</i> , as amended
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>
LA <sub>10</sub> (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: <ul style="list-style-type: none"> <li>• Revised noise assessment titled: <i>Noise Impact Assessment Rev 1</i>, dated May 2020 prepared by Umwelt Environmental Consulting;</li> <li>• Letter from Umwelt Environmental Consulting, dated 20 May 2020; and</li> <li>• Letter from Benbow Environmental, dated 10 September 2020.</li> </ul>
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:
- (a) 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
  - (b) 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*

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

**Notes:**

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

<sup>b</sup> Incremental impact (i.e. incremental increase in concentrations due to the development on its own).

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

<sup>d</sup> 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:
- (a) identify existing and potential sources of dust deposition, TSP and fine particulates (PM<sub>10</sub> and PM<sub>2.5</sub>) 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 experience 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<sub>2.5</sub> 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.<sup>1</sup>
- 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;

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<sup>1</sup> 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.<sup>2</sup>

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.<sup>3</sup>

## 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.

<sup>2</sup> Environment Protection Authority General Term of Approval

<sup>3</sup> 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:
- 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;
  - 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;
  - include proposed construction to deepen (or replace) PT84MW1 in order that a bore in that general location monitors the regional aquifer; and
  - 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:

- identify existing and potential noise sources and their relative contribution to noise impacts from the development;
- 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;
- 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;
- 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<sub>Aeq</sub> (15 min)</i>	6am-7am Monday to Saturday <i>L<sub>A1</sub> (1 min)</i>	6am-7am Monday to Saturday <i>L<sub>Aeq</sub> (15 min)</i>
Receiver B	44	50	40
All other receivers	43	50	40

<sup>a</sup>The 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)	<ul style="list-style-type: none"> <li>• Safe, stable and non-polluting</li> <li>• Final landform integrated with surrounding natural landforms as far as is reasonable and feasible, and minimising visual impacts when viewed from surrounding land</li> <li>• </li> </ul>
Surface Infrastructure	<ul style="list-style-type: none"> <li>• Decommissioned and removed, unless the Secretary agrees otherwise</li> </ul>



Quarry Pit Floor	<ul style="list-style-type: none"> <li>• Landscaped and revegetated using improved pasture species, native trees and understorey species</li> </ul>
Final Void	<ul style="list-style-type: none"> <li>• Minimise the height and slope of batters</li> <li>• Minimise the drainage catchment</li> </ul>
Community	<ul style="list-style-type: none"> <li>• Ensure public safety</li> <li>• Minimise the adverse socio-economic effects of quarry closure</li> </ul>

### ***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:
- (a) be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;
  - (b) include consultation with the relevant agencies;
  - (c) 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);
  - (d) review the adequacy of strategies, plans or programs required under the abovementioned approvals; and
  - (e) 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:
- (a) 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
  - (b) keep this information up-to-date, to the satisfaction of the Secretary.'

## APPENDIX 1 FINAL LANDFORM DESIGN



FIGURE 4.2  
Proposed Final Landform – 1,200,000 m3 Fill

### Final Landform Concept 1

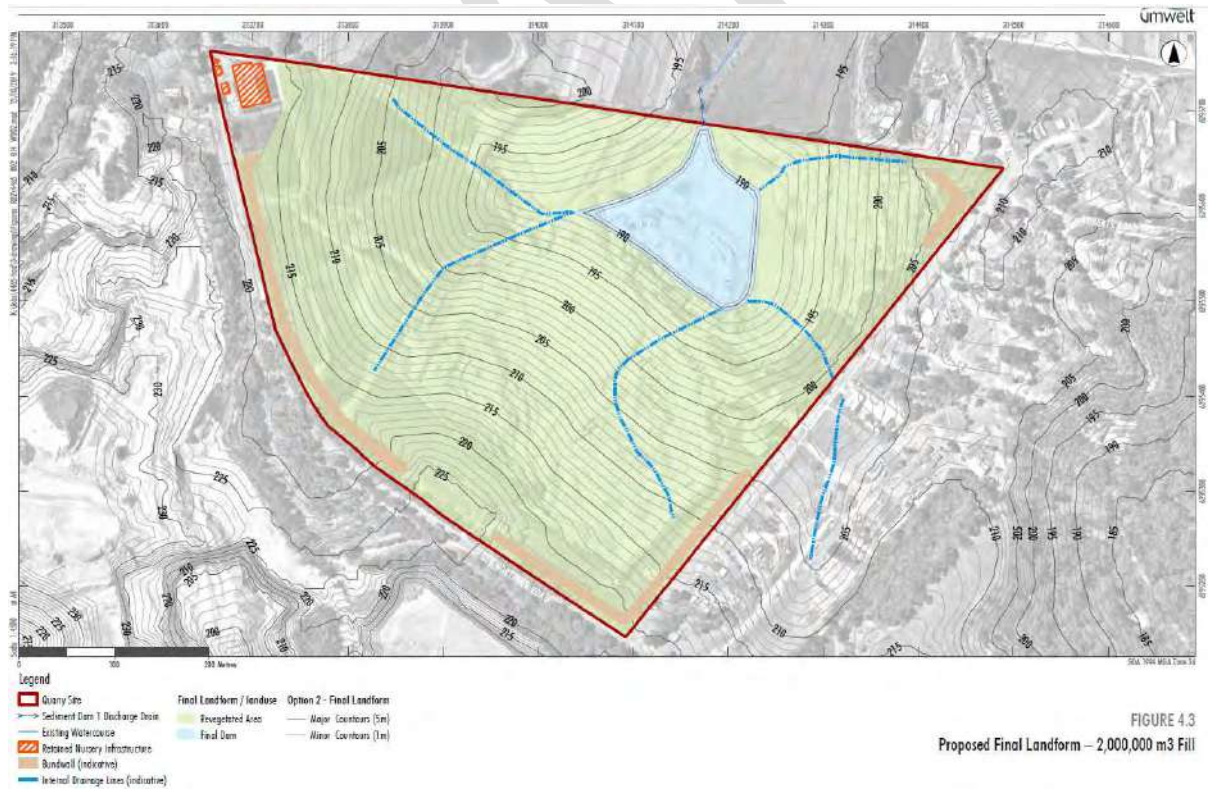


FIGURE 4.3  
Proposed Final Landform – 2,000,000 m3 Fill

### Final Landform Concept 2

## APPENDIX 2 RECEIVER LOCATION PLAN



A solid green rectangular block positioned to the left of the 'Appendix C' text.

## Appendix C

# Environmental Protection Licence 6535



# Environment Protection Licence

Licence - 6535

## Licence Details

Number:	6535
Anniversary Date:	12-March

## Licensee

HB MARROOTA PTY LTD

PO BOX 1778

GOSFORD NSW 2250

## Premises

HB MARROOTA PTY LTD

CNR ROBERTS &amp; OLD NORTHERN ROADS

MARROOTA NSW 2756

## Scheduled Activity

Crushing, grinding or separating

Extractive activities

## Fee Based Activity

<u>Fee Based Activity</u>	<u>Scale</u>
Crushing, grinding or separating	> 100000-500000 T annual processing capacity
Extractive activities	> 100000-500000 T annually extracted or processed

## Region

Metropolitan West - Sydney

4 Parramatta Square, 12 Darcy Street

PARRAMATTA NSW 2150

Phone: (02) 9995 5000

Fax: (02) 9995 6900

Locked Bag 5022

PARRAMATTA NSW 2124



# Environment Protection Licence

Licence - 6535

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# Environment Protection Licence

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Licence - 6535



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# Environment Protection Licence

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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:

<b>HB MARROOTA PTY LTD</b>
<b>PO BOX 1778</b>
<b>GOSFORD NSW 2250</b>

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

### A2 Premises or plant to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
HB MAROOKA PTY LTD
CNR ROBERTS & OLD NORTHERN ROADS
MAROOKA
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.

# Environment Protection Licence

Licence - 6535



### A3 Information supplied to the EPA

A3.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:

- a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
- b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

## 2 Discharges to Air and Water and Applications to Land

### P1 Location of monitoring/discharge points and areas

P1.1 The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.

## 3 Limit Conditions

# Environment Protection Licence

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Licence - 6535

## **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 Noise limits**

L2.1 Noise from the premises must not exceed the sound pressure level expressed as LA10 (15 minute) of 45 dB(A), except as expressly provided by this licence.

L2.2 Noise from the premises is to be measured or computed at any point within one metre of any residential boundary, or at any point within 30 metres of the dwelling where the dwelling is more than 30 metres from the boundary, to determine compliance with the noise level limits in Condition L2.1.

## **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**

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



# Environment Protection Licence

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Licence - 6535



## 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.
- M3.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a

# Environment Protection Licence



Licence - 6535

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 Summary must be signed by:

- a) the licence holder; or

# Environment Protection Licence



Licence - 6535

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 the incident occurred.

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 satisfied with the report provided by the licensee. The licensee must provide such further details to the

# Environment Protection Licence

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Licence - 6535



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

<b>3DGM [in relation to a concentration limit]</b>	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
<b>Act</b>	Means the Protection of the Environment Operations Act 1997
<b>activity</b>	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
<b>actual load</b>	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
<b>AM</b>	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> .
<b>AMG</b>	Australian Map Grid
<b>anniversary date</b>	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.
<b>annual return</b>	Is defined in R1.1
<b>Approved Methods Publication</b>	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
<b>assessable pollutants</b>	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
<b>BOD</b>	Means biochemical oxygen demand
<b>CEM</b>	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> .
<b>COD</b>	Means chemical oxygen demand
<b>composite sample</b>	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.
<b>cond.</b>	Means conductivity
<b>environment</b>	Has the same meaning as in the Protection of the Environment Operations Act 1997
<b>environment protection legislation</b>	Has the same meaning as in the Protection of the Environment Administration Act 1991
<b>EPA</b>	Means Environment Protection Authority of New South Wales.
<b>fee-based activity classification</b>	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009.
<b>general solid waste (non-putrescible)</b>	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997

# Environment Protection Licence

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<b>flow weighted composite sample</b>	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
<b>general solid waste (putrescible)</b>	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
<b>grab sample</b>	Means a single sample taken at a point at a single time
<b>hazardous waste</b>	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
<b>licensee</b>	Means the licence holder described at the front of this licence
<b>load calculation protocol</b>	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
<b>local authority</b>	Has the same meaning as in the Protection of the Environment Operations Act 1997
<b>material harm</b>	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
<b>MBAS</b>	Means methylene blue active substances
<b>Minister</b>	Means the Minister administering the Protection of the Environment Operations Act 1997
<b>mobile plant</b>	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
<b>motor vehicle</b>	Has the same meaning as in the Protection of the Environment Operations Act 1997
<b>O&amp;G</b>	Means oil and grease
<b>percentile [in relation to a concentration limit of a sample]</b>	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.
<b>plant</b>	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
<b>pollution of waters [or water pollution]</b>	Has the same meaning as in the Protection of the Environment Operations Act 1997
<b>premises</b>	Means the premises described in condition A2.1
<b>public authority</b>	Has the same meaning as in the Protection of the Environment Operations Act 1997
<b>regional office</b>	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
<b>reporting period</b>	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.
<b>restricted solid waste</b>	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
<b>scheduled activity</b>	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
<b>special waste</b>	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
<b>TM</b>	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

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

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



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## Appendix D

# Water Licence Conditions

## Monitoring Bore Licences

# 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 LICENCE 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.

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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.

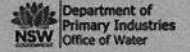
**More information:** Should you require further information or technical assistance, please submit your request to [water.enquiries@dpi.nsw.gov.au](mailto:water.enquiries@dpi.nsw.gov.au) or contact 1800 353 104.

# 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

<u>Portion(s) or Lot/Section/DP</u>	<u>PARISH</u>	<u>COUNTY</u>
1//228308	Maroota	Cumberland

<u>TYPE OF WORKS</u>	<u>PURPOSE(S) FOR WHICH WATER MAY BE USED</u>
Bore	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 ▼

605696

#### **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.

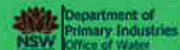
**More information:** Should you require further information or technical assistance, please submit your request to [water.enquiries@dpi.nsw.gov.au](mailto:water.enquiries@dpi.nsw.gov.au) or contact 1800 353 104.

# 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,

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(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.

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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.
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- 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.

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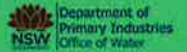
End Of Conditions

# 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) or Lev/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.

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(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.

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(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.

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- ANY OTHER PERSONS LAND;
- ANY CROWN LAND;
- ANY RIVER, CREEK OR WATERCOURSE;
- ANY NATIVE VEGETATION AS DESCRIBED UNDER THE NATIVE VEGETATION CONSERVATION ACT 1997;
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(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.

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---

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**

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(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.

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- (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.

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End Of Conditions



# Pumping Bore Licence

BOX 1W  
(A1845103)

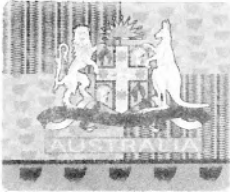
COPY



NEW SOUTH WALES

# CERTIFICATE OF TITLE

WATER MANAGEMENT ACT, 2000



WAL TITLE REFERENCE <b>WAL24163</b>	
EDITION <b>1</b>	DATE OF ISSUE <b>1/9/2014</b>
CERTIFICATE AUTHENTICATION CODE <b>MP27-QV-7HVH</b>	



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**

10 ▼

BL ▼

159748

#### **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			
<a href="#">24163</a>	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](mailto: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
<a href="#">10WA114817</a>	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
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**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](mailto: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****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](mailto:water.enquiries@dpi.nsw.gov.au) or contact 1800 353 104.

## Dam Licences



## Information about a water licence or approval

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- 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

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)
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Unregulated River	Current	Hawkesbury And Lower Nepean Rivers Water Source	Continuing	Lower Hawkesbury River Management Zone	264.00
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#### 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 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:  
A. a volume equal to 100 % of the share component of the licence, or  
B. 1 ML/unit share of the share component of the licence.
- MW0036-00002 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.
- 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.
- MW0670-00001 Water must only be taken if there is visible flow in the water source at the location where water is to be taken.  
  
This restriction does not apply if water is to be taken:  
A. from an off-river pool, an in-river pool, a runoff harvesting dam or an in-river dam pool, or  
B. from the following Weirs: Maldon, Douglas Park, Menangle, Camden, Sharpes, Cobbity, Mount Hunter Rivulet, Brownlow Hill, Theresa Park and Wallacia.
- MW0013-00002 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.  
B. This restriction will only apply when the system that confirms when water can be taken is available on the relevant licensor website.  
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.  
  
This restriction does not apply if water is to be taken from a runoff harvesting dam or an in-river dam pool.
- MW0004-00002 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:  
A. the sum of:  
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,

or

- 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](mailto: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

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



### Approval details

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

### Contact for service of documents

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<b>Name</b>	Martin, Leonard Stanley
<b>Address</b>	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

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The holders of this approval are:

Approval holder(s)	ACN (if applicable)
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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**

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**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**

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

**Work 2**

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

### Schedule 3 - Water Use

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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

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**Specified purpose**

IRRIGATION

**Specified location**

1//228308  
2//228308

## Schedule 4 - Conditions

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The approval is subject to the following conditions:

### Plan conditions

#### Water sharing plan

#### *Greater Metropolitan Region Unregulated River Water Sources*

#### Take of water

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##### 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

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##### 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

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##### 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

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##### 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](mailto: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**

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- 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**

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- 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 <b>WAL24157</b>	
EDITION <b>1</b>	DATE OF ISSUE <b>1/9/2014</b>
CERTIFICATE AUTHENTICATION CODE <b>24DC-MV-FR4X</b>	



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 \*\*\*\*

## 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 '10BL157595'

WAL No.	Water Source	Status			
<a href="#">24157</a>	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](mailto: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
<a href="#">10CA114819</a>	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](mailto: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](mailto:water.enquiries@dpi.nsw.gov.au) or contact 1800 353 104.

A solid green rectangular block positioned to the left of the 'Appendix E' text.

## Appendix E

# Annual Extraction Form

# Extractive Materials Return

## 2021-2022



# Regional NSW

Form S1 – Period Ending 30 June 2022

Quote RIMS ID in all correspondence

Quarry Id: _____ Rims ID: <u>DA267/11/99</u>	Inquiries please telephone: (02) 4063 6713 <b>Completed or Nil Returns</b> Email – mineral.royalty@regional.nsw.gov.au Postal Address (see below)
Operators Name: <u>HODGSON QUARRIES &amp; PLANT P/L</u> Address: <u>28 ROBERTS RD MAROOTA NSW 2156</u> Email: <u>HODGSONQUARRIES@GMAIL.COM</u> Quarry Name: <u>MARTIN HODGSON</u> Quarry Address: _____	

The return should be completed and forwarded to **Senior Advisory Officer, RESOURCE ECONOMICS, STRATEGY, PERFORMANCE & INDUSTRY DEVELOPMENT, DEPARTMENT OF REGIONAL NSW, PO BOX 344 HUNTER REGION MAIL CENTRE NSW 2310 on or before 31 October 2022**. If completion of the return is unavoidably delayed, an application for extension of time should be requested **before** the due date. If no work was done during the year, a **NIL** return must be forwarded.

The return should relate to the **above quarrying establishment** and should cover the operations of quarrying and treatment (such as crushing, screening, washing etc.) carried out at or near the quarry. A return is required even if the operations are solely of a developmental nature and whether the area being worked is held under a mining title or otherwise.

Director, Performance

Please complete all the following information to assist in identifying the location of the Quarry

Typical Geology MAROOTA SAND & HAWKESBURY SANDSTONE

Nearest Town to Quarry GLENDORIE NSW 2157

Local Council Name BAULKAM HILLS COUNCIL

Deposited Plan and Lot Number/s of Quarry LOTS 1 & 2 DP 228308 LOT 2 DP 312327

Email Address of Operator AS ABOVE

Name of Owner or Licensee MARTIN HODGSON

Postal Address of Licensee PO BOX 355 GLENDORIE NSW 2157

Licence/Lease Number/s (if any)

From Mining, Exploration & Geoscience (NSW Mineral Resources) \_\_\_\_\_

From Crown Lands or other NSW Department NO

If any output was obtained from land NOT held under licence from the above Departments, state the Name/s and Address/es of the Owners of the land \_\_\_\_\_

To the best of my knowledge, information entered in this return is correct and no blank spaces left where figures should have been inserted.

- SIGNATURE of PROPRIETOR or MANAGER [Signature] DATE 16/11/22
- CONTACT PERSON for this return STUART REED
- NAME (Block letters) AS ABOVE Telephone 0418277871

# Extractive Materials Return

## 2021-2022



Regional  
NSW

Form S1 – Period Ending 30 June 2022

### Sales During 2021-2022

Production information may be published in aggregated form for statistical reporting. However, production data for individual operations is kept strictly confidential.

Product	Description	Quantity Tonnes
<b>Virgin Materials</b>		
<b>Crushed Coarse Aggregates</b>		
Over 75mm		
Over 30mm to 75mm		
5mm to 30mm		
Under 5mm		
Natural Sand		
Manufactured Sand		
Prepared Road Base & Sub Base		
Other Unprocessed Materials		
<b>Recycled Materials</b>		
<b>Crushed Coarse Aggregates</b>		
Over 75mm		
Over 30mm to 75mm		
5mm to 30mm		
Under 5mm		
Natural Sand	VIRGIN SAND	MAX 500,000 / ANN
Manufactured Sand		
Prepared Road Base & Sub Base		
Other Unprocessed Materials		
<b>River Gravel</b>		
Over 30mm		
5mm to 30mm		
Under 5mm		
<b>Construction Sand</b>	Excluding Industrial	
<b>Industrial Sand</b>		
Foundry, Moulding		
Glass		
Other (Specify)		
<b>Dimension Stone</b>	Building, Ornamental, Monumental	
Quarried in Blocks		
Quarried in Slabs		
<b>Decorative Aggregate</b>	Including Terrazzo	
<b>Loam</b>	Soil for Topdressing, Garden soil, Horticultural purposes)	
<b>TOTAL SITE PRODUCTION</b>		102,000.91 T
<b>Gross Value (\$) of all Sales</b>		
<b>Type of Material</b>		
Number of Full-Time Equivalent (FTE) Employees	Employees 6	Contractors 0

Please Note: A return for clay-based products can be obtained by contacting the inquiry number.

**From:** [Elaine Gray](#) on behalf of [DRNSW MEG Mineral Royalty Mailbox](#)  
**To:** [Lisa Thomson](#)  
**Subject:** RE: State Significant Sand Quarry  
**Date:** Wednesday, 16 November 2022 11:53:33 AM  
**Attachments:** [image002.png](#)

---

Good morning Lisa,

Thank you for your email.

Please go ahead and submit the S1 Extractive Materials Return, noting it is for a financial year period.

Regards,

**Elaine Gray**

Resources Analyst

Performance | Mining, Exploration and Geoscience

**Department of Regional NSW**

P 02 4063 6640 E [elaine.gray@regional.nsw.gov.au](mailto:elaine.gray@regional.nsw.gov.au)

[regional.nsw.gov.au](http://regional.nsw.gov.au)

Maitland



**Department of Regional NSW**

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We stand on Country that always was and always will be Aboriginal land. We acknowledge the Traditional Custodians of the land and waters, and we show our respect for Elders past, present and emerging. We are committed to providing places in which Aboriginal people are included socially, culturally and economically through thoughtful and collaborative approaches to our work.

---

**From:** Lisa Thomson <[Lisa@vgt.com.au](mailto:Lisa@vgt.com.au)>  
**Sent:** Tuesday, 15 November 2022 2:12 PM  
**To:** DRNSW MEG Mineral Royalty Mailbox <[mineral.royalty@regional.nsw.gov.au](mailto:mineral.royalty@regional.nsw.gov.au)>  
**Subject:** State Significant Sand Quarry

To Whom it may concern,

I have a client who has a modified state consent that now has the following condition:

PRODUCTION DATA

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.

Can you please tell me whether the attached form is that referred to in this condition?

Regards,  
Lisa Thomson  
BAppSc, CChem

Phone: (02) 4028 6412 | Mobile: 0427 334471  
[www.vgt.com.au](http://www.vgt.com.au)



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This email is intended for the addressee(s) named and may contain confidential and/or privileged information.

If you are not the intended recipient, please notify the sender and then delete it immediately.

Any views expressed in this email are those of the individual sender except where the sender expressly and with authority states them to be the views of the Department of Regional NSW.

**PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING THIS EMAIL**

**From:** [Lisa Thomson](#)  
**To:** [DRNSW MEG Mineral Royalty Mailbox](#)  
**Cc:** [hodgsonquarries](#)  
**Subject:** Extraction Form 21-22 DA267/11/99  
**Date:** Thursday, 24 November 2022 10:45:00 AM  
**Attachments:** [Extraction Form 21-22.pdf](#)

---

To whom it may concern,

Please find attached the S1 Form for the Roberts Rd Maroota Sand Quarry DA267/11/99. This is submitted in compliance with a condition of consent for Modification 4 (Aug 2021):

*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.*

This form is thereby submitted on behalf of Hodgson Quarries and Plant Pty Ltd.

Regards,  
Lisa Thomson  
BAppSc, CChem

Phone: (02) 4028 6412 | Mobile: 0427 334471  
[www.vgt.com.au](http://www.vgt.com.au)





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## Appendix F

## VENM / ENM Certificates

**Hodgson Quarry Products Pty Ltd**  
 PO BOX 355  
 GLENORIE NSW 2157  
 Office Phone : 02 4372 1649 - Fax : 02 4372 1569

### Activity Log - Detail

January 2022 To February 2023

Date	Activity	Units	Notes				
Outside Materials Outsou	*None						
2/06/2022	VENM - OUTSOURCED MATERIALS	27.18	VENM 01751				
2/06/2022	VENM - OUTSOURCED MATERIALS	27.74	VENM 01752				
3/06/2022	VENM - OUTSOURCED MATERIALS	31.26	VENM 01753				
3/06/2022	VENM - OUTSOURCED MATERIALS	28.44	VENM 01754				
4/06/2022	VENM - OUTSOURCED MATERIALS	22.52	VENM 01755				
6/06/2022	VENM - OUTSOURCED MATERIALS	23.56	VENM 01756				
6/06/2022	VENM - OUTSOURCED MATERIALS	30.44	VENM 01757				
6/06/2022	VENM - OUTSOURCED MATERIALS	29.84	VENM 01758				
7/06/2022	VENM - OUTSOURCED MATERIALS	23.46	VENM 01759				
7/06/2022	VENM - OUTSOURCED MATERIALS	26.38	VENM 01760				
8/06/2022	VENM - OUTSOURCED MATERIALS	24.20	VENM 01761				
8/06/2022	VENM - OUTSOURCED MATERIALS	27.98	VENM 01762				
8/06/2022	VENM - OUTSOURCED MATERIALS	23.40	VENM 01763				
8/06/2022	VENM - OUTSOURCED MATERIALS	28.58	VENM 01764				
9/06/2022	VENM - OUTSOURCED MATERIALS	29.36	VENM 10768				
9/06/2022	VENM - OUTSOURCED MATERIALS	23.78	VENM 10767				
9/06/2022	VENM - OUTSOURCED MATERIALS	22.92	VENM 01765				
9/06/2022	VENM - OUTSOURCED MATERIALS	28.24	VENM 01766				
10/06/2022	VENM - OUTSOURCED MATERIALS	25.06	VENM 01769				
10/06/2022	VENM - OUTSOURCED MATERIALS	29.20	VENM 01770				
13/07/2022	VENM - OUTSOURCED MATERIALS	21.58	VENM 01772				
14/07/2022	VENM - OUTSOURCED MATERIALS	21.50	VENM 01773				
14/07/2022	VENM - OUTSOURCED MATERIALS	20.59	VENM 01774				
15/07/2022	VENM - OUTSOURCED MATERIALS	19.64	VENM 01776				
15/07/2022	VENM - OUTSOURCED MATERIALS	14.96	VENM 01775				
20/07/2022	EMN - OUTSOURCED MATERIALS	32.20	ENM 01777				
26/07/2022	VENM - OUTSOURCED MATERIALS	21.50	VENM 01778				
27/07/2022	VENM - OUTSOURCED MATERIALS	10.80	VENM 01779				
27/07/2022	VENM - OUTSOURCED MATERIALS	15.80	VENM 01780				
27/07/2022	VENM - OUTSOURCED MATERIALS	12.90	VENM 01781				
27/07/2022	VENM - OUTSOURCED MATERIALS	22.96	VENM 01782				
28/07/2022	VENM - OUTSOURCED MATERIALS	10.90	VENM 01784				
28/07/2022	VENM - OUTSOURCED MATERIALS	12.06	VENM 01783				
29/07/2022	VENM - OUTSOURCED MATERIALS	12.10	VENM 01786				
29/07/2022	VENM - OUTSOURCED MATERIALS	11.66	VENM 01785				
1/08/2022	VENM - OUTSOURCED MATERIALS	11.44	VENM 01787				
1/08/2022	VENM - OUTSOURCED MATERIALS	17.44	VENM 01788				
1/08/2022	VENM - OUTSOURCED MATERIALS	11.78	VENM 01789				
1/08/2022	VENM - OUTSOURCED MATERIALS	12.70	VENM 01790				
1/08/2022	VENM - OUTSOURCED MATERIALS	12.80	VENM 01791				
1/08/2022	VENM - OUTSOURCED MATERIALS	28.84	VENM 01771 10/06/2022				
2/08/2022	VENM - OUTSOURCED MATERIALS	28.96	VENM 01792				
2/08/2022	VENM - OUTSOURCED MATERIALS	10.42	VENM 01793				
2/08/2022	VENM - OUTSOURCED MATERIALS	19.18	VENM 01794				
2/08/2022	VENM - OUTSOURCED MATERIALS	6.38	VENM 01795				
2/08/2022	EMN - OUTSOURCED MATERIALS	36.74	ENM 01796				
3/08/2022	EMN - OUTSOURCED MATERIALS	35.54	ENM 01797				
3/08/2022	EMN - OUTSOURCED MATERIALS	26.04	ENM 01798				
3/08/2022	EMN - OUTSOURCED MATERIALS	34.62	ENM 01799				
4/08/2022	EMN - OUTSOURCED MATERIALS	36.84	ENM 01802				
4/08/2022	EMN - OUTSOURCED MATERIALS	36.74	ENM 01801				
4/08/2022	EMN - OUTSOURCED MATERIALS	27.90	ENM 01800				
5/08/2022	EMN - OUTSOURCED MATERIALS	36.68	ENM 01804				
5/08/2022	EMN - OUTSOURCED MATERIALS	27.90	ENM 01803				
8/08/2022	EMN - OUTSOURCED MATERIALS	36.70	ENM 01808				
8/08/2022	EMN - OUTSOURCED MATERIALS	36.68	ENM 01805				
8/08/2022	VENM - OUTSOURCED MATERIALS	6.60	VENM 01806				
8/08/2022	VENM - OUTSOURCED MATERIALS	13.56	VENM 01807				
9/08/2022	EMN - OUTSOURCED MATERIALS	37.00	ENM 01810				
9/08/2022	EMN - OUTSOURCED MATERIALS	27.90	ENM 01809				
9/08/2022	EMN - OUTSOURCED MATERIALS	38.16	ENM 01812				
9/08/2022	EMN - OUTSOURCED MATERIALS	31.42	ENM 01811				
9/08/2022	EMN - OUTSOURCED MATERIALS	29.68	ENM 01813				
10/08/2022	VENM - OUTSOURCED MATERIALS	20.98	VENM 01815				
10/08/2022	EMN - OUTSOURCED MATERIALS	29.70	ENM 01817				
10/08/2022	EMN - OUTSOURCED MATERIALS	36.70	ENM 01814				
10/08/2022	EMN - OUTSOURCED MATERIALS	38.00	ENM 01816				
11/08/2022	EMN - OUTSOURCED MATERIALS	29.24	ENM 01820				
11/08/2022	EMN - OUTSOURCED MATERIALS	28.60	ENM 01819				
11/08/2022	EMN - OUTSOURCED MATERIALS	29.12	ENM 01818				
12/08/2022	EMN - OUTSOURCED MATERIALS	35.74	ENM 01821				
12/08/2022	EMN - OUTSOURCED MATERIALS	35.92	ENM 01823				
12/08/2022	EMN - OUTSOURCED MATERIALS	27.80	ENM 01822				
12/08/2022	EMN - OUTSOURCED MATERIALS	29.30	ENM 01824				
15/08/2022	EMN - OUTSOURCED MATERIALS	36.70	ENM 01825				
15/08/2022	EMN - OUTSOURCED MATERIALS	35.30	ENM 01826				

**Hodgson Quarry Products Pty Ltd**  
 PO BOX 355  
 GLENORIE NSW 2157  
 Office Phone : 02 4372 1649 - Fax : 02 4372 1569

### Activity Log - Detail

January 2022 To February 2023

Date	Activity	Units	Notes						
15/08/2022	EMN - OUTSOURCED MATERIALS	29.66	ENM 01827						
15/08/2022	EMN - OUTSOURCED MATERIALS	28.98	ENM 01828						
16/08/2022	EMN - OUTSOURCED MATERIALS	27.77	ENM 01829						
17/08/2022	EMN - OUTSOURCED MATERIALS	35.54	ENM 01830						
19/08/2022	EMN - OUTSOURCED MATERIALS	31.36	ENM 01838						
19/08/2022	EMN - OUTSOURCED MATERIALS	36.20	ENM 01836						
19/08/2022	EMN - OUTSOURCED MATERIALS	31.06	ENM 01835						
19/08/2022	EMN - OUTSOURCED MATERIALS	31.56	ENM 01837						
19/08/2022	EMN - OUTSOURCED MATERIALS	35.76	ENM 01833						
19/08/2022	EMN - OUTSOURCED MATERIALS	32.00	ENM 01832						
19/08/2022	EMN - OUTSOURCED MATERIALS	31.80	ENM 01834						
19/08/2022	EMN - OUTSOURCED MATERIALS	32.36	ENM 01831						
22/08/2022	EMN - OUTSOURCED MATERIALS	29.75	ENM 01839						
22/08/2022	EMN - OUTSOURCED MATERIALS	28.52	ENM 01840						
23/08/2022	EMN - OUTSOURCED MATERIALS	29.00	ENM 01843						
23/08/2022	EMN - OUTSOURCED MATERIALS	28.52	ENM 01844						
23/08/2022	EMN - OUTSOURCED MATERIALS	37.22	ENM 01841						
23/08/2022	EMN - OUTSOURCED MATERIALS	28.94	ENM 01842						
24/08/2022	EMN - OUTSOURCED MATERIALS	36.84	ENM 01847						
24/08/2022	EMN - OUTSOURCED MATERIALS	36.04	ENM 01845						
24/08/2022	EMN - OUTSOURCED MATERIALS	29.16	ENM 01846						
25/08/2022	EMN - OUTSOURCED MATERIALS	38.64	ENM 01848						
26/08/2022	EMN - OUTSOURCED MATERIALS	35.26	ENM 01849						
26/08/2022	EMN - OUTSOURCED MATERIALS	37.44	ENM 01850						
27/08/2022	EMN - OUTSOURCED MATERIALS	38.78	ENM 01851						
29/08/2022	VENM - OUTSOURCED MATERIALS	23.80	VENM 01856						
29/08/2022	VENM - OUTSOURCED MATERIALS	25.56	VENM 01857						
29/08/2022	EMN - OUTSOURCED MATERIALS	38.32	ENM 01855						
29/08/2022	EMN - OUTSOURCED MATERIALS	35.86	ENM 01853						
29/08/2022	EMN - OUTSOURCED MATERIALS	31.20	ENM 01852						
29/08/2022	VENM - OUTSOURCED MATERIALS	23.52	VENM 01854						
2/09/2022	EMN - OUTSOURCED MATERIALS	31.08	01858						
2/09/2022	EMN - OUTSOURCED MATERIALS	39.02	01859						
5/09/2022	EMN - OUTSOURCED MATERIALS	38.58	01860						
5/09/2022	EMN - OUTSOURCED MATERIALS	35.58	01861						
8/09/2022	EMN - OUTSOURCED MATERIALS	9.72	01862						
8/09/2022	EMN - OUTSOURCED MATERIALS	17.00	01863						
8/09/2022	EMN - OUTSOURCED MATERIALS	10.98	01864						
9/09/2022	VENM - OUTSOURCED MATERIALS	25.10	01865						
10/09/2022	EMN - OUTSOURCED MATERIALS	37.82	01866						
12/09/2022	EMN - OUTSOURCED MATERIALS	36.56	01867						
12/09/2022	EMN - OUTSOURCED MATERIALS	38.30	01868						
12/09/2022	VENM - OUTSOURCED MATERIALS	27.20	01869						
13/09/2022	EMN - OUTSOURCED MATERIALS	35.82	01870						
14/09/2022	EMN - OUTSOURCED MATERIALS	39.00	01872						
14/09/2022	VENM - OUTSOURCED MATERIALS	15.91	01871						
15/09/2022	VENM - OUTSOURCED MATERIALS	10.37	01873						
15/09/2022	EMN - OUTSOURCED MATERIALS	36.06	01874						
15/09/2022	VENM - OUTSOURCED MATERIALS	13.50	01875						
15/09/2022	EMN - OUTSOURCED MATERIALS	38.98	01876						
15/09/2022	VENM - OUTSOURCED MATERIALS	13.94	01878						
15/09/2022	EMN - OUTSOURCED MATERIALS	39.20	01879						
15/09/2022	VENM - OUTSOURCED MATERIALS	10.30	01880						
15/09/2022	VENM - OUTSOURCED MATERIALS	10.48	01881						
15/09/2022	EMN - OUTSOURCED MATERIALS	29.00	01877						
16/09/2022	EMN - OUTSOURCED MATERIALS	38.86	01883						
16/09/2022	EMN - OUTSOURCED MATERIALS	28.78	01882						
19/09/2022	VENM - OUTSOURCED MATERIALS	15.86	01884						
19/09/2022	EMN - OUTSOURCED MATERIALS	37.50	01886						
19/09/2022	VENM - OUTSOURCED MATERIALS	16.86	01885						
20/09/2022	VENM - OUTSOURCED MATERIALS	18.80	01889						
20/09/2022	EMN - OUTSOURCED MATERIALS	38.74	01888						
20/09/2022	EMN - OUTSOURCED MATERIALS	35.70	01887						
21/09/2022	VENM - OUTSOURCED MATERIALS	13.50	01890						
21/09/2022	VENM - OUTSOURCED MATERIALS	13.48	01891						
21/09/2022	EMN - OUTSOURCED MATERIALS	39.18	01892						
21/09/2022	VENM - OUTSOURCED MATERIALS	11.88	01893						
21/09/2022	VENM - OUTSOURCED MATERIALS	13.54	01894						
23/09/2022	EMN - OUTSOURCED MATERIALS	31.26	01895						
23/09/2022	VENM - OUTSOURCED MATERIALS	12.64	01896						
23/09/2022	VENM - OUTSOURCED MATERIALS	17.20	01897						
23/09/2022	EMN - OUTSOURCED MATERIALS	31.00	01898						
23/09/2022	EMN - OUTSOURCED MATERIALS	38.26	01899						
23/09/2022	VENM - OUTSOURCED MATERIALS	12.98	01900						
23/09/2022	VENM - OUTSOURCED MATERIALS	18.60	01901						
26/09/2022	VENM - OUTSOURCED MATERIALS	20.76	01905						
26/09/2022	EMN - OUTSOURCED MATERIALS	26.82	01903						

**Hodgson Quarry Products Pty Ltd**  
 PO BOX 355  
 GLENORIE NSW 2157  
 Office Phone : 02 4372 1649 - Fax : 02 4372 1569

### Activity Log - Detail

January 2022 To February 2023

Date	Activity	Units	Notes						
26/09/2022	EMN - OUTSOURCED MATERIALS	34.50	01902						
26/09/2022	EMN - OUTSOURCED MATERIALS	38.32	01904						
27/09/2022	EMN - OUTSOURCED MATERIALS	36.04	01906						
27/09/2022	VEMN - OUTSOURCED MATERIALS	11.66	01907						
27/09/2022	EMN - OUTSOURCED MATERIALS	36.20	01910						
27/09/2022	EMN - OUTSOURCED MATERIALS	23.00	01908						
27/09/2022	EMN - OUTSOURCED MATERIALS	27.06	01909						
28/09/2022	EMN - OUTSOURCED MATERIALS	29.04	01912						
28/09/2022	EMN - OUTSOURCED MATERIALS	21.72	01911						
28/09/2022	VEMN - OUTSOURCED MATERIALS	17.10	01915						
28/09/2022	EMN - OUTSOURCED MATERIALS	38.98	01914						
29/09/2022	VEMN - OUTSOURCED MATERIALS	23.94	01920						
29/09/2022	VEMN - OUTSOURCED MATERIALS	22.06	01918						
29/09/2022	EMN - OUTSOURCED MATERIALS	35.88	01916						
29/09/2022	EMN - OUTSOURCED MATERIALS	36.16	01917						
29/09/2022	EMN - OUTSOURCED MATERIALS	38.98	01919						
30/09/2022	EMN - OUTSOURCED MATERIALS	22.88	01922						
30/09/2022	EMN - OUTSOURCED MATERIALS	29.08	01923						
30/09/2022	EMN - OUTSOURCED MATERIALS	38.44	01924						
30/09/2022	VEMN - OUTSOURCED MATERIALS	31.94	01925						
30/09/2022	EMN - OUTSOURCED MATERIALS	35.58	01921						
30/09/2022	VEMN - OUTSOURCED MATERIALS	12.78	01926						
30/09/2022	VEMN - OUTSOURCED MATERIALS	23.48	01927						
4/10/2022	EMN - OUTSOURCED MATERIALS	36.46	01928						
4/10/2022	EMN - OUTSOURCED MATERIALS	36.70	01931						
4/10/2022	EMN - OUTSOURCED MATERIALS	21.96	01929						
4/10/2022	VEMN - OUTSOURCED MATERIALS	17.91	01930						
4/10/2022	EMN - OUTSOURCED MATERIALS	25.16	01932						
5/10/2022	EMN - OUTSOURCED MATERIALS	28.88	01935						
5/10/2022	VEMN - OUTSOURCED MATERIALS	11.84	01933						
5/10/2022	VEMN - OUTSOURCED MATERIALS	4.90	01934						
7/10/2022	EMN - OUTSOURCED MATERIALS	28.40	01936						
7/10/2022	EMN - OUTSOURCED MATERIALS	29.04	01937						
7/10/2022	VEMN - OUTSOURCED MATERIALS	13.62	01938						
11/10/2022	EMN - OUTSOURCED MATERIALS	39.00	01939						
12/10/2022	VEMN - OUTSOURCED MATERIALS	10.42	01940						
13/10/2022	VEMN - OUTSOURCED MATERIALS	16.20	01942						
13/10/2022	VEMN - OUTSOURCED MATERIALS	19.86	01941						
14/10/2022	EMN - OUTSOURCED MATERIALS	36.84	01943						
14/10/2022	EMN - OUTSOURCED MATERIALS	39.12	01945						
17/10/2022	VEMN - OUTSOURCED MATERIALS	17.74	01946						
17/10/2022	VEMN - OUTSOURCED MATERIALS	11.70	01947						
17/10/2022	VEMN - OUTSOURCED MATERIALS	22.80	01948						
18/10/2022	EMN - OUTSOURCED MATERIALS	28.78	01949						
18/10/2022	VEMN - OUTSOURCED MATERIALS	19.18	01950						
18/10/2022	EMN - OUTSOURCED MATERIALS	28.76	01952						
18/10/2022	VEMN - OUTSOURCED MATERIALS	11.60	01951						
18/10/2022	VEMN - OUTSOURCED MATERIALS	19.62	01953						
18/10/2022	VEMN - OUTSOURCED MATERIALS	8.04	01954						
19/10/2022	VEMN - OUTSOURCED MATERIALS	13.68	01955						
20/10/2022	VEMN - OUTSOURCED MATERIALS	10.34	01957						
20/10/2022	VEMN - OUTSOURCED MATERIALS	18.26	01956						
21/10/2022	VEMN - OUTSOURCED MATERIALS	16.96	01960						
21/10/2022	VEMN - OUTSOURCED MATERIALS	10.00	01959						
21/10/2022	VEMN - OUTSOURCED MATERIALS	25.32	01958						
22/10/2022	VEMN - OUTSOURCED MATERIALS	24.78	01961						
24/10/2022	EMN - OUTSOURCED MATERIALS	28.00	01962						
25/10/2022	EMN - OUTSOURCED MATERIALS	27.60	01963						
25/10/2022	EMN - OUTSOURCED MATERIALS	28.36	01964						
25/10/2022	EMN - OUTSOURCED MATERIALS	28.50	01966						
25/10/2022	VEMN - OUTSOURCED MATERIALS	13.58	01965						
26/10/2022	EMN - OUTSOURCED MATERIALS	29.28	01968						
26/10/2022	EMN - OUTSOURCED MATERIALS	28.14	01967						
27/10/2022	EMN - OUTSOURCED MATERIALS	31.80	01969						
27/10/2022	EMN - OUTSOURCED MATERIALS	28.66	01971						
27/10/2022	EMN - OUTSOURCED MATERIALS	30.00	01972						
27/10/2022	VEMN - OUTSOURCED MATERIALS	15.54	01970						
27/10/2022	VEMN - OUTSOURCED MATERIALS	15.00	01974						
28/10/2022	VEMN - OUTSOURCED MATERIALS	9.40	01973						
29/10/2022	VEMN - OUTSOURCED MATERIALS	15.62	01975						
31/10/2022	VEMN - OUTSOURCED MATERIALS	17.52	01977						
31/10/2022	VEMN - OUTSOURCED MATERIALS	21.34	01976						
1/11/2022	VEMN - OUTSOURCED MATERIALS	13.86	01978						
1/11/2022	VEMN - OUTSOURCED MATERIALS	16.08	01979						
2/11/2022	VEMN - OUTSOURCED MATERIALS	14.34	01980						
2/11/2022	EMN - OUTSOURCED MATERIALS	30.98	01981						
2/11/2022	VEMN - OUTSOURCED MATERIALS	14.81	01982						

**Hodgson Quarry Products Pty Ltd**  
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 GLENORIE NSW 2157  
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### Activity Log - Detail

January 2022 To February 2023

Date	Activity	Units	Notes					
2/11/2022	EMN - OUTSOURCED MATERIALS	30.72	01983					
2/11/2022	VEMN - OUTSOURCED MATERIALS	14.50	01984					
3/11/2022	EMN - OUTSOURCED MATERIALS	30.52	01985					
3/11/2022	EMN - OUTSOURCED MATERIALS	30.30	01986					
3/11/2022	VEMN - OUTSOURCED MATERIALS	25.00	01987					
4/11/2022	VEMN - OUTSOURCED MATERIALS	24.84	01988					
4/11/2022	VEMN - OUTSOURCED MATERIALS	25.36	01989					
8/11/2022	EMN - OUTSOURCED MATERIALS	29.14	01990					
8/11/2022	EMN - OUTSOURCED MATERIALS	29.92	01991					
10/11/2022	VEMN - OUTSOURCED MATERIALS	25.18	01992					
11/11/2022	VEMN - OUTSOURCED MATERIALS	25.04	01993					
14/11/2022	VEMN - OUTSOURCED MATERIALS	15.48	01994					
14/11/2022	VEMN - OUTSOURCED MATERIALS	11.87	01995					
14/11/2022	VEMN - OUTSOURCED MATERIALS	17.28	01996					
17/11/2022	EMN - OUTSOURCED MATERIALS	27.47	01997					
17/11/2022	EMN - OUTSOURCED MATERIALS	31.58	01998					
22/11/2022	VEMN - OUTSOURCED MATERIALS	25.81	01999					
23/11/2022	VEMN - OUTSOURCED MATERIALS	25.80	02000					
28/11/2022	EMN - OUTSOURCED MATERIALS	29.90	02002					
28/11/2022	EMN - OUTSOURCED MATERIALS	27.38	02001					
29/11/2022	EMN - OUTSOURCED MATERIALS	28.76	02003					
5/12/2022	EMN - OUTSOURCED MATERIALS	33.75	02004 RNR119					
5/12/2022	EMN - OUTSOURCED MATERIALS	28.70	02005 RNR119					
6/12/2022	EMN - OUTSOURCED MATERIALS	30.32	02006 RNR119					
7/12/2022	EMN - OUTSOURCED MATERIALS	30.40	02007 RNR119					
7/12/2022	EMN - OUTSOURCED MATERIALS	27.50	02008 RNR119					
21/12/2022	EMN - OUTSOURCED MATERIALS	30.28	02009 RNR119					
16/01/2023	EMN - OUTSOURCED MATERIALS	32.64	02011 RNR119					
16/01/2023	EMN - OUTSOURCED MATERIALS	31.30	02010 RNR119					
19/01/2023	VEMN - OUTSOURCED MATERIALS	28.90	02012 RNR119					
2/02/2023	VEMN - OUTSOURCED MATERIALS	29.90	02013 RNR119					
2/02/2023	VEMN - OUTSOURCED MATERIALS	30.20	02014 RNR119					
3/02/2023	VEMN - OUTSOURCED MATERIALS	31.00	02015 RNR119					
3/02/2023	VEMN - OUTSOURCED MATERIALS	29.80	02016 RNR119					
6/02/2023	VEMN - OUTSOURCED MATERIALS	28.60	02017 RNR119					
7/02/2023	VEMN - OUTSOURCED MATERIALS	29.06	02018 RNR119					
16/02/2023	VEMN - OUTSOURCED MATERIALS	26.30	02019 RNR119 (YRD13)					
16/02/2023	VEMN - OUTSOURCED MATERIALS	31.10	02020 RNR119 (YRD13)					
16/02/2023	VEMN - OUTSOURCED MATERIALS	26.64	02021 RNR119 (YRD13)					
20/02/2023	VEMN - OUTSOURCED MATERIALS	29.04	02022 RNR119					
20/02/2023	VEMN - OUTSOURCED MATERIALS	28.54	02023 RNR119					
21/02/2023	VEMN - OUTSOURCED MATERIALS	30.56	02024 RNR119					
21/02/2023	VEMN - OUTSOURCED MATERIALS	28.08	02025 RNR119					
21/02/2023	VEMN - OUTSOURCED MATERIALS	28.86	02026 RNR119					
28/02/2023	VEMN - OUTSOURCED MATERIALS	29.18	02027 RNR119					
		7,162.15						

**Activity Slip [Employee Detail]**

October 2022

Date Activity	Units	Notes	Hours
<b>Outside Materials Outsourced</b>			
	*None		
<b>CW Mills Excavations</b>			
4/10/2022	VEMN - OUTSOURCED MATERIALS	17.91 01930	17.91
5/10/2022	VEMN - OUTSOURCED MATERIALS	11.84 01933	11.84
12/10/2022	VEMN - OUTSOURCED MATERIALS	10.42 01940	10.42
17/10/2022	VEMN - OUTSOURCED MATERIALS	11.70 01947	11.70
17/10/2022	VEMN - OUTSOURCED MATERIALS	17.74 01946	17.74
18/10/2022	VEMN - OUTSOURCED MATERIALS	19.18 01950	19.18
18/10/2022	VEMN - OUTSOURCED MATERIALS	11.60 01951	11.60
18/10/2022	VEMN - OUTSOURCED MATERIALS	8.04 01954	8.04
18/10/2022	VEMN - OUTSOURCED MATERIALS	19.62 01953	19.62
19/10/2022	VEMN - OUTSOURCED MATERIALS	13.68 01955	13.68
20/10/2022	VEMN - OUTSOURCED MATERIALS	18.26 01956	18.26
20/10/2022	VEMN - OUTSOURCED MATERIALS	10.34 01957	10.34
21/10/2022	VEMN - OUTSOURCED MATERIALS	16.96 01960	16.96
25/10/2022	VEMN - OUTSOURCED MATERIALS	13.58 01965	13.58
27/10/2022	VEMN - OUTSOURCED MATERIALS	15.54 01970	15.54
27/10/2022	VEMN - OUTSOURCED MATERIALS	15.00 01974	15.00
28/10/2022	VEMN - OUTSOURCED MATERIALS	9.40 01973	9.40
29/10/2022	VEMN - OUTSOURCED MATERIALS	15.62 01975	15.62
31/10/2022	VEMN - OUTSOURCED MATERIALS	21.34 01976	21.34
31/10/2022	VEMN - OUTSOURCED MATERIALS	17.52 01977	17.52
CW Mills Excavations Total:			295.29
			REFER ATTACHED
<b>Down Under Demolition &amp; Excavations Pty Ltd</b>			
5/10/2022	VEMN - OUTSOURCED MATERIALS	4.90 01934	4.90
7/10/2022	VEMN - OUTSOURCED MATERIALS	13.62 01938	13.62
13/10/2022	VEMN - OUTSOURCED MATERIALS	16.20 01942	16.20
13/10/2022	VEMN - OUTSOURCED MATERIALS	19.86 01941	19.86
17/10/2022	VEMN - OUTSOURCED MATERIALS	22.80 01948	22.80
21/10/2022	VEMN - OUTSOURCED MATERIALS	25.32 01958	25.32
21/10/2022	VEMN - OUTSOURCED MATERIALS	10.00 01959	10.00
22/10/2022	VEMN - OUTSOURCED MATERIALS	24.78 01961	24.78
Down Under Demolition & Excavations Pty Ltd Total:			137.48
			REFER ATTACHED
<b>Gow Street Recycling Centre Pty Ltd</b>			
4/10/2022	EMN - OUTSOURCED MATERIALS	36.46 01928	36.46
4/10/2022	EMN - OUTSOURCED MATERIALS	36.70 01931	36.70
11/10/2022	EMN - OUTSOURCED MATERIALS	39.00 01939	39.00
14/10/2022	EMN - OUTSOURCED MATERIALS	39.12 01945	39.12
14/10/2022	EMN - OUTSOURCED MATERIALS	36.84 01943	36.84
Gow Street Recycling Centre Pty Ltd Total:			188.12
			REFER CAE 1243.2 & 1243.3
<b>Road &amp; Rail Excavations Pty Ltd</b>			
4/10/2022	EMN - OUTSOURCED MATERIALS	25.16 01932	25.16
4/10/2022	EMN - OUTSOURCED MATERIALS	21.96 01929	21.96
5/10/2022	EMN - OUTSOURCED MATERIALS	28.88 01935	28.88
7/10/2022	EMN - OUTSOURCED MATERIALS	28.40 01936	28.40
7/10/2022	EMN - OUTSOURCED MATERIALS	29.04 01937	29.04
18/10/2022	EMN - OUTSOURCED MATERIALS	28.78 01949	28.78

Hodgson Quarry Products Pty Ltd

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Office Phone : 02 4372 1649 - Fax : 02 4372

ABN: 19 098 975 047

Email: info@hodgsonquarryproducts.com.au

**Activity Slip [Employee Detail]**

October 2022

Date	Activity	Units	Notes	Hours
18/10/2022	EMN - OUTSOURCED MATERIALS	28.76	01952	28.76
24/10/2022	EMN - OUTSOURCED MATERIALS	28.00	01962	28.00
25/10/2022	EMN - OUTSOURCED MATERIALS	28.50	01966	28.50
25/10/2022	EMN - OUTSOURCED MATERIALS	28.36	01964	28.36
25/10/2022	EMN - OUTSOURCED MATERIALS	27.60	01963	27.60
26/10/2022	EMN - OUTSOURCED MATERIALS	29.28	01968	29.28
26/10/2022	EMN - OUTSOURCED MATERIALS	28.14	01967	28.14
27/10/2022	EMN - OUTSOURCED MATERIALS	31.80	01969	31.80
27/10/2022	EMN - OUTSOURCED MATERIALS	28.66	01971	28.66
27/10/2022	EMN - OUTSOURCED MATERIALS	30.00	01972	30.00
Road & Rail Excavations Pty Ltd Total: REFER RG.374-WAC-1-1				451.32
Outside Materials Outsourced Total:				1,072.21
Grand Total:				1,072.21

**Certification:  
Virgin excavated natural material**

<p>1. I [full name] <u>CW Mills Excavations Pty Ltd</u>  of [organisation and address] <u>300 Sackville Ferry Road Sackville Nth 2756</u></p> <p>certify that the waste as set out in section 2 of this notice is Virgin Excavated Natural Material (VENM) as defined in Schedule 1 of the <i>Protection of the Environment Operations Act 1997</i>.</p> <p>This certification is made on behalf of the waste generator [fill out if applicable] being [full name] of [organisation and address]</p>
<p>2. The waste was generated at:  Street address: <u>18 Auluba Road 5th Turramurra 2074</u></p> <p>Title reference (Lot/DP, etc.):  The amount of waste (by volume or weight) is: <u>17.91T Docket # 0930</u></p>
<p>3. I have made the determination that the waste is VENM because:</p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> I have assessed the historical and current land use of the site at which the waste was generated.</li> <li><input checked="" type="checkbox"/> The waste is not contaminated with manufactured chemicals, or with process residues, as a result of industrial, commercial, mining or agricultural activities.</li> <li><input checked="" type="checkbox"/> The waste does not contain any sulfidic ores or soils.</li> <li><input checked="" type="checkbox"/> The waste does not contain any other waste.</li> <li><input checked="" type="checkbox"/> The waste does not contain asbestos in any form.</li> </ul>

**Note:** that all sections of this form must be completed including all boxes checked in Section 3 above and signed below for any material to be certified as VENM.

Signature(s)   
Name(s) (printed) Charles Mills  
Date 4/10/22

**Warning:** There are significant penalties under s.144AA of the *Protection of the Environment Operations Act 1997* for a person who supplies (whether knowingly or not) information that is false or misleading in a material respect about waste.



# Coleman Adams Environmental

● Environmental Investigations ● Risk Assessment ● Project Management

PO Box R1370 The Royal Exchange NSW 1225 Sydney

ABN 57 635 464 041

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Client: Gow Street Recycling Center

Project Number: CAE1243.2

Date: 15/09/2022

## Material Classification Certificate

### 81 Gow Street Padstow NSW

Waste Classification Report			
<b>Site Details</b>			
Address	81 Gow Street Padstow NSW		
Lot Reference	Lot A and 2 DP103140		
<b>Material Information</b>			
Source Location	Material is located within site boundaries, imported from sites across Sydney region. An estimated 500 tonnes of stockpiled material is proposed to be removed from the site.		
Material Identification	The stockpiled soils encountered on site consisted of brown gravelly clayey sand.		
Observations	Material sampled was free of foreign materials and signs of contamination. No odours, ACM or other indicators of contamination were detected.		
Samples Collected	Three soil samples were collected from the stockpile. Sampling method following AS1141 method 3.1.		
Samples Analysed	1243.2.1 to 1243.2.4		
Sampling Date	09-09-2022	Sampler	JL
Analytes	<ul style="list-style-type: none"> <li>• Heavy metals;</li> <li>• Total recoverable hydrocarbons (TRH);</li> <li>• Benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN);</li> <li>• Polyaromatic hydrocarbons (PAH);</li> <li>• Organochlorine Pesticides, organophosphorus Pesticides;</li> <li>• Polychlorinated Biphenyls;</li> <li>• pH and Conductivity (EC);</li> <li>• Asbestos and foreign materials.</li> </ul>		
Waste Classification	<b>Excavated Natural Material</b> - in accordance with the EPA Waste Classification Guidelines (2014)		
Approved by	 <b>M. Tofler</b> Principal LAA001351		

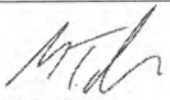
# ***Coleman Adams Environmental***

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Client: Gow Street Recycling Center  
 Project Number: CAE1243.3  
 Date: 23/09/2022

## **Material Classification Certificate 81 Gow Street Padstow NSW**

Waste Classification Report			
<b>Site Details</b>			
Address		81 Gow Street Padstow NSW	
Lot Reference		Lot A and 2 DP103140	
<b>Material Information</b>			
Source Location		Material is located within site boundaries, imported from sites across Sydney region. An estimated 500 tonnes of stockpiled material is proposed to be removed from the site.	
Material Identification		The stockpiled soils encountered on site consisted of brown gravelly clayey sand.	
Observations		Material sampled was free of foreign materials and signs of contamination. No odours, ACM or other indicators of contamination were detected.	
Samples Collected		Three soil samples were collected from the stockpile. Sampling method following AS1141 method 3.1.	
Samples Analysed		1243.3.1 to 1243.3.4	
Sampling Date		16-09-2022	Sampler JL
Analytes		<ul style="list-style-type: none"> <li>• Heavy metals;</li> <li>• Total recoverable hydrocarbons (TRH);</li> <li>• Benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN);</li> <li>• Polyaromatic hydrocarbons (PAH);</li> <li>• Organochlorine Pesticides, organophosphorus Pesticides;</li> <li>• Polychlorinated Biphenyls;</li> <li>• pH and Conductivity (EC);</li> <li>• Asbestos and foreign materials.</li> </ul>	
Waste Classification		<b>Excavated Natural Material-</b> in accordance with the EPA Waste Classification Guidelines (2014)	
Approved by		 <b>M.Tofler</b> Principal LAA001351	

**Road and Rail Excavations Pty Ltd**

**10 September 2022**

2/17 Mount Erin Road,  
 Campbelltown NSW 2560

## WASTE CLASSIFICATION REPORT

### Summary of waste classification report

<b>Report Number</b>	RG374-WAC-1-1
<b>Project Name</b>	Camelia
<b>Site Storage Address</b>	19 Grand Avenue, Camelia, NSW 2142
<b>Classified Waste</b>	SP1 - with approximately 950 tonnes
<b>Waste Matrix and Description</b>	SP1 – Silty Clay, mottled red/white/grey, high plasticity, soft, moist.
<b>Sample IDs</b>	SP1-1 to SP1-3 (3 soil samples in total)
<b>Waste Classification</b>	SP1 - <i>Excavated Natural Materials (ENM)</i>

### 1. INTRODUCTION

Road and Rail Excavations Pty Ltd (the client) has requested Rapid Geo Pty Ltd (Rapid Geo) to assess stockpiled soil materials (SP1) excavated as part of the M6 Stage 1 project. The stockpiled soil materials SP1 are currently stored at 19 Grand Avenue, Camelia, NSW 2142 (refer to **Project Figures, Attachment 1**).

The objective of this investigation was to assess contamination characteristics of soil materials (as observed during fieldwork activities) to facilitate offsite disposal. The scope of works proposed and completed by Rapid Geo included:

- Visual inspection along the site surface of the project alignment as well as in-situ soil materials inspection in targeted test pits (developed by the client) located along the project alignment.
- Sample collection of three (3) soil samples (SP1-1 to SP1-3) from the stockpile SP1, for waste classification purposes.
- Submission of soil samples for analysis to determine contaminants of potential concern at a NATA accredited laboratory.
- Evaluation of analyte concentrations in accordance with assessment criteria outlined in the relevant guideline for off-site disposal.
- Preparation of waste classification report detailing the observations of the site inspection, results of analysis undertaken and classification of the in-situ soil materials.

The following investigation/classification has been undertaken with reference to the relevant sections of the NSW EPA *Waste Classification Guidelines* (2014) and the NSW EPA *Excavated Natural Material Order* (2014).

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## Appendix G

## Complaints Register

# Hodgsons Quarries Complaints Register

Date published:

14/03/2023

Date Received	Site Complaint Regarding	Pollution Complaint Category					
		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						
Aug-15	Nil received						

# Hodgsons Quarries Complaints Register

Date published:

14/03/2023

Date Received	Site Complaint Regarding	Pollution Complaint Category					
		Air	Water	Noise	Waste	Traffic	Other
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						
Mar-20	Nil received						
Apr-20	Nil received						

# Hodgsons Quarries Complaints Register

Date published:

14/03/2023

Date Received	Site Complaint Regarding	Pollution Complaint Catgeory					
		Air	Water	Noise	Waste	Traffic	Other
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						

## Appendix H

# Weather Data Summaries



JANUARY 2022

LOCAL CLIMATOLOGICAL DATA

DAVIS INSTRUMENTS, WEATHERLINK NETWORK

Maroota, NSW AUS

Hodgson Quarries - Maroota

Lat: -33.4650 Long: 151.0008 Elev (ground): 205 m Time Zone: Australia/Sydney



TEMPERATURE °C						DEG DAYS BASE 18.3°		PRECIP. (mm)	PRESSURE (hPa)		WIND SPEED = km/h DIR = DEGREES								Date		
Date	MAXIMUM	MINIMUM	AVERAGE	AVERAGE DEW PT	AVERAGE WET BULB	HEATING	COOLING	WATER EQUIV	AVERAGE STATION	AVERAGE SEA LEVEL	RESULTANT SPEED	RES DIR	AVERAGE SPEED	WIND MAX							
														INSTANT		2 - MIN		ARCHIVE			
														SPEED	DIR	SPEED	DIR	SPEED		DIR	
01	28.1	16.6	22.1	17.1	18.4	0.231	4.032	0.0	989.0	1013.4	2.3	122	2.7	27.4	144	17.4	125	12.2	145	01	
02	30.6	17.8	24.0	18.1	19.5	0.014	5.639	0.0	986.1	1010.5	3.8	127	4.1	27.4	119	15.3	133	11.8	123	02	
03	27.7	18.1	22.7	17.1	18.5	0.008	4.372	0.0	986.9	1011.3	2.8	162	3.2	33.8	168	16.3	138	11.0	157	03	
04	27.1	18.0	22.0	17.5	18.7	0.009	3.687	0.2	987.6	1012.0	2.6	176	3.3	27.4	139	16.2	144	12.0	146	04	
05	24.8	18.6	21.1	19.4	19.9	0.000	2.765	18.2	988.0	1012.3	1.3	161	1.8	29.0	156	12.3	137	8.1	140	05	
06	25.9	20.8	22.5	20.1	20.7	0.000	4.179	10.6	989.4	1013.8	6.9	123	7.0	37.0	143	20.0	127	16.8	129	06	
07	27.9	19.2	23.5	20.6	21.4	0.000	5.186	17.4	988.6	1012.9	5.9	121	6.6	45.1	257	25.0	331	18.2	325	07	
08	32.7	18.7	23.4	19.5	20.4	0.000	5.060	27.6	986.9	1011.2	1.6	102	3.0	29.0	162	15.2	340	11.0	206	08	
09	24.6	19.6	21.3	19.5	20.0	0.000	2.952	3.0	992.3	1016.8	0.6	236	0.9	14.5	197	8.5	200	5.6	195	09	
10	28.9	20.9	23.5	20.9	21.5	0.000	5.177	0.4	994.5	1019.0	2.0	145	2.6	24.1	148	12.5	132	10.1	152	10	
11	29.4	20.7	23.2	20.4	21.1	0.000	4.879	0.4	994.8	1019.3	0.3	162	0.5	14.5	171	6.8	114	4.1	151	11	
12	27.2	18.3	21.9	18.4	19.3	0.000	3.553	2.0	995.1	1019.6	1.9	188	2.4	29.0	225	13.3	242	9.4	167	12	
13	26.7	17.9	21.2	18.4	19.1	0.044	2.885	3.4	993.5	1018.0	0.8	197	1.4	22.5	140	11.5	216	8.0	212	13	
14	29.6	18.8	23.1	19.3	20.2	0.000	4.813	0.2	986.8	1011.2	0.5	115	0.9	20.9	138	10.9	354	7.6	147	14	
15	33.3	19.3	24.2	19.4	20.5	0.000	5.864	9.0	982.0	1006.2	1.0	31	2.1	25.7	5	18.1	4	12.6	360	15	
16	29.1	19.4	23.1	19.9	20.7	0.000	4.797	0.0	984.8	1009.0	1.3	148	1.5	22.5	150	13.1	149	9.1	151	16	
17	33.6	20.5	24.9	20.9	21.8	0.000	6.565	0.0	987.1	1011.4	1.0	128	1.3	19.3	145	9.7	133	7.0	146	17	
18	24.6	19.1	22.1	19.8	20.4	0.000	3.733	7.0	989.1	1013.5	1.4	221	1.5	20.9	134	7.8	222	4.5	219	18	
19	20.7	16.4	18.2	16.7	17.2	0.511	0.355	11.8	995.6	1020.1	3.1	224	3.2	30.6	219	13.7	206	9.8	209	19	
20	22.7	16.1	19.0	14.3	15.7	0.383	1.078	0.0	1002.7	1027.3	5.8	205	5.9	38.6	171	21.1	210	14.9	195	20	
21	22.9	15.5	18.8	15.4	16.4	0.723	1.239	3.4	1003.6	1028.2	2.6	178	2.9	25.7	170	13.9	158	9.4	151	21	
22	24.6	16.2	19.6	15.4	16.6	0.648	1.922	0.0	999.1	1023.6	2.2	184	2.8	25.7	232	14.5	150	11.4	151	22	
23	23.9	16.3	19.4	16.4	17.3	0.424	1.504	2.0	993.5	1017.9	1.2	199	2.0	25.7	160	11.4	190	8.1	164	23	
24	25.0	17.5	20.3	17.2	18.0	0.184	2.106	2.4	989.6	1014.0	0.9	155	1.5	17.7	145	9.4	141	6.9	140	24	
25	26.2	18.1	21.4	17.4	18.5	0.007	3.101	0.0	987.8	1012.1	2.5	139	2.6	22.5	167	13.4	139	9.1	130	25	
26	27.0	17.7	21.6	16.3	17.7	0.025	3.318	0.0	990.0	1014.4	3.4	139	3.4	30.6	134	15.8	142	12.5	147	26	
27	26.2	16.2	21.5	16.6	17.9	0.428	3.548	0.0	991.7	1016.1	3.0	121	3.2	22.5	159	12.0	95	7.4	128	27	
28	29.8	19.1	24.0	18.8	20.1	0.000	5.630	0.0	991.6	1016.0	2.8	136	3.0	22.5	150	13.1	149	11.1	154	28	
29	31.0	18.8	24.0	19.4	20.5	0.000	5.626	0.0	991.4	1015.8	2.3	142	2.4	22.5	147	11.3	138	8.9	143	29	
30	27.9	20.8	23.7	19.2	20.3	0.000	5.364	0.0	990.8	1015.2	3.3	138	3.4	29.0	139	15.9	131	10.3	151	30	
31	31.8	19.6	24.0	19.8	20.8	0.000	5.708	0.0	985.6	1009.9	1.5	137	1.8	25.7	135	14.0	134	10.8	139	31	
	27.5	18.4	22.1	18.4	19.3	0.260	3.892		990.8	1015.2	2.3	153.60	2.7	< Monthly Avg							
NUMBER OF DAYS WITH:		>		Maximum Temp ≥ 32.2: 3			Minimum Temp ≤ 0: 0			Precipitation ≥ 0.2 mm: 15			Greatest 24 - hr precipitation: 45.0 Date: 7-8								
				Maximum Temp ≤ 0: 0			Minimum Temp ≤ -17.7: 0			Precipitation ≥ 2.0 mm: 10			Monthly Total Precipitation: 119.0								
SEA LEVEL PRESSURE:		>		MAXIMUM: 1029.9		DATE: 20		TIME: 22:51		MONTHLY TOTAL		HEATING: 3.638		SEASON TO DATE TOTAL		3.638					
				MINIMUM: 1002.7		DATE: 15		TIME: 19:06		DEGREEE DAYS: >		COOLING: 120.639		320.745							

JANUARY 2022  
Maroota, NSW AUS

FEBRUARY 2022

LOCAL CLIMATOLOGICAL DATA

DAVIS INSTRUMENTS, WEATHERLINK NETWORK

Maroota, NSW AUS  
Hodgson Quarries - Maroota



Lat: -33.4650 Long: 151.0008 Elev (ground): 205 m Time Zone: Australia/Sydney

TEMPERATURE °C						DEG DAYS BASE 18.3°		PRECIP. (mm)	PRESSURE (hPa)		WIND SPEED = km/h DIR = DEGREES								Date	
Date	MAXIMUM	MINIMUM	AVERAGE	AVERAGE DEW PT	AVERAGE WET BULB	HEATING	COOLING	WATER EQUIV	AVERAGE STATION	AVERAGE SEA LEVEL	RESULTANT SPEED	RES DIR	AVERAGE SPEED	WIND MAX						
														INSTANT		2 - MIN		ARCHIVE		
														SPEED	DIR	SPEED	DIR	SPEED		DIR
01	34.9	19.9	25.4	20.5	21.5	0.000	7.073	28.8	979.2	1003.4	0.7	341	1.1	45.1	261	20.8	256	7.6	322	01
02	24.2	16.2	19.7	18.3	18.7	0.358	1.748	13.0	981.9	1006.1	1.3	242	2.0	19.3	231	8.1	18	5.7	15	02
03	23.8	15.6	18.4	14.0	15.3	1.016	1.108	0.0	984.6	1008.9	4.0	228	4.3	33.8	208	17.4	207	13.7	212	03
04	20.8	13.7	17.0	12.4	13.9	1.578	0.293	7.2	991.5	1015.9	3.7	225	4.2	41.8	221	17.6	207	11.6	205	04
05	23.2	14.4	17.6	13.9	15.1	1.480	0.786	4.4	995.1	1019.6	3.6	203	3.9	32.2	171	19.6	209	13.2	194	05
06	22.9	15.2	18.1	14.5	15.6	1.181	0.911	7.8	998.3	1022.8	3.5	198	3.7	45.1	186	22.1	210	16.0	201	06
07	21.2	15.0	17.1	15.0	15.7	1.442	0.233	12.2	997.3	1021.9	1.7	240	2.0	27.4	232	15.7	202	14.2	211	07
08	25.5	14.4	18.1	14.7	15.7	1.542	1.298	1.4	992.0	1016.4	0.3	207	1.2	24.1	146	10.8	138	8.3	147	08
09	31.4	14.2	22.3	14.3	16.1	1.017	4.943	0.0	987.8	1012.2	0.5	5	2.3	27.4	324	15.3	328	9.0	146	09
10	33.6	15.7	23.9	15.7	17.6	0.384	5.918	8.6	988.6	1013.0	0.5	290	1.7	37.0	350	18.7	332	15.5	341	10
11	23.4	18.1	20.3	17.8	18.6	0.004	1.972	2.4	992.7	1017.2	2.7	228	2.9	30.6	208	17.0	221	10.9	207	11
12	23.1	16.6	18.3	16.2	16.9	0.677	0.692	4.4	994.7	1019.2	1.3	221	1.7	25.7	164	12.7	149	8.7	170	12
13	24.3	16.3	19.3	15.5	16.6	0.616	1.601	0.4	998.0	1022.5	2.3	126	2.7	25.7	165	13.7	129	11.9	140	13
14	28.6	14.0	20.7	15.8	17.2	1.055	3.448	0.0	1000.2	1024.7	3.0	120	3.2	27.4	140	13.0	139	9.8	139	14
15	28.3	16.4	21.8	16.9	18.2	0.266	3.775	0.0	999.2	1023.8	2.9	129	3.1	29.0	142	15.3	106	11.3	149	15
16	28.4	16.2	21.7	16.7	18.0	0.348	3.729	0.0	994.3	1018.8	1.8	115	2.1	20.9	95	12.0	97	7.7	124	16
17	35.8	16.2	23.5	17.3	18.7	0.358	5.513	1.0	986.6	1011.0	1.0	29	2.1	45.1	348	31.2	338	21.7	347	17
18	32.3	18.1	23.6	18.4	19.7	0.006	5.292	0.0	987.6	1012.0	2.2	175	3.2	32.2	141	17.3	148	13.8	151	18
19	21.6	17.4	19.6	16.7	17.5	0.086	1.337	0.4	995.2	1019.7	0.9	209	1.2	29.0	179	10.3	186	7.8	195	19
20	31.1	15.4	22.7	17.8	19.0	0.426	4.823	0.0	987.7	1012.1	2.0	89	2.4	25.7	89	12.5	96	8.0	112	20
21	31.6	18.5	23.2	17.6	19.0	0.000	4.883	4.6	985.6	1009.9	4.3	8	7.4	49.9	318	33.4	332	30.4	327	21
22	22.5	18.9	19.8	18.5	18.9	0.000	1.431	66.2	993.0	1017.4	0.7	262	1.0	17.7	323	7.9	348	6.4	325	22
23	26.9	19.0	22.0	19.6	20.2	0.000	3.668	8.4	994.6	1019.1	1.9	153	2.1	25.7	141	0.0	0	8.9	140	23
24	26.1	19.8	22.0	20.3	20.7	0.000	3.714	19.8	993.5	1017.9	1.3	144	1.8	25.7	120	0.0	0	9.4	116	24
25	24.4	19.3	21.1	20.0	20.3	0.000	2.809	34.0	991.3	1015.7	0.8	268	1.0	17.7	141	9.0	211	5.8	302	25
26	21.2	17.3	19.3	18.2	18.5	0.063	1.010	15.0	991.5	1015.9	0.7	180	1.2	22.5	254	11.0	150	6.2	155	26
27	24.1	18.1	19.9	18.6	19.0	0.016	1.575	4.8	990.7	1015.1	0.2	236	0.4	14.5	190	6.8	201	3.3	211	27
28	24.8	18.1	20.2	18.7	19.1	0.006	1.845	7.2	990.2	1014.5	0.8	167	1.0	19.3	120	10.3	121	8.3	131	28
	26.4	16.7	20.6	16.9	17.9	0.633	2.765		991.5	1015.9	1.8	179.87	2.4	< Monthly Avg						
NUMBER OF DAYS WITH: >						Maximum Temp ≥ 32.2: 4		Minimum Temp ≤ 0: 0		Precipitation ≥ 0.2 mm: 21			Greatest 24 - hr precipitation: 45.2 Date: 24-25							
						Maximum Temp ≤ 0: 0		Minimum Temp ≤ -17.7: 0		Precipitation ≥ 2.0 mm: 16			Monthly Total Precipitation: 252.0							
SEA LEVEL PRESSURE: >						MAXIMUM: 1026.2		DATE: 14		TIME: 10:48		DEGREEE DAYS: >			MONTHLY TOTAL: 13.925		SEASON TO DATE TOTAL: 17.564			
						MINIMUM: 999.8		1		17:08					COOLING: 77.431		398.177			

FEBRUARY 2022  
Maroota, NSW AUS

MARCH 2022

LOCAL CLIMATOLOGICAL DATA

DAVIS INSTRUMENTS, WEATHERLINK NETWORK

Maroota, NSW AUS

Hodgson Quarries - Maroota

Lat: -33.4650 Long: 151.0008 Elev (ground): 205 m Time Zone: Australia/Sydney



TEMPERATURE °C						DEG DAYS BASE 18.3°		PRECIP. (mm)	PRESSURE (hPa)		WIND SPEED = km/h DIR = DEGREES								Date	
Date	MAXIMUM	MINIMUM	AVERAGE	AVERAGE DEW PT	AVERAGE WET BULB	HEATING	COOLING	WATER EQUIV	AVERAGE STATION	AVERAGE SEA LEVEL	RESULTANT SPEED	RES DIR	AVERAGE SPEED	WIND MAX						
														INSTANT		2 - MIN		ARCHIVE		
														SPEED	DIR	SPEED	DIR	SPEED		DIR
01	21.8	18.4	19.6	18.4	18.8	0.000	1.285	21.0	988.2	1012.6	2.3	164	2.5	30.6	139	15.6	155	9.5	162	01
02	19.8	18.1	18.9	18.1	18.4	0.018	0.634	134.2	986.2	1010.6	1.0	209	1.5	29.0	169	12.7	166	7.8	165	02
03	23.0	19.1	20.4	19.4	19.7	0.000	2.019	38.8	985.8	1010.1	3.9	220	4.0	30.6	245	14.6	222	12.2	202	03
04	24.9	20.6	21.8	20.6	20.9	0.000	3.433	10.2	987.3	1011.6	3.0	217	3.0	29.0	228	0.0	0	8.7	225	04
05	27.0	19.0	22.5	20.4	21.0	0.000	4.160	12.6	983.5	1007.7	0.3	164	1.2	25.7	257	0.0	0	7.3	133	05
06	21.7	18.2	20.1	19.2	19.4	0.011	1.745	81.6	983.0	1007.2	2.4	271	3.3	32.2	342	0.6	336	15.9	337	06
07	26.3	20.7	22.7	21.3	21.7	0.000	4.326	69.4	984.2	1008.5	2.1	182	2.7	30.6	138	12.3	154	8.0	154	07
08	20.7	20.2	20.5	19.8	20.0	0.000	0.861	6.4	982.2	1006.4	1.4	240	1.5	17.7	219	0.0	0	4.1	167	08
21	27.8	13.7	20.5	15.2	16.7	0.239	1.557	15.8	992.3	1016.7	1.2	208	2.0	29.0	166	20.9	206	20.6	206	21
22	31.0	13.7	21.7	16.2	17.5	1.248	4.609	0.0	987.9	1012.2	0.9	87	1.1	14.5	19	6.4	15	5.1	101	22
23	25.6	17.6	21.6	17.1	18.3	0.048	3.354	0.8	986.6	1010.9	1.5	181	2.7	25.7	181	12.4	189	8.4	195	23
24	19.2	16.5	17.4	16.2	16.6	0.962	0.032	11.8	992.4	1016.9	0.3	256	0.5	14.5	172	5.6	294	3.6	302	24
25	21.7	16.6	18.2	16.6	17.1	0.674	0.554	7.8	994.9	1019.4	0.5	241	1.0	25.7	173	14.2	209	6.9	223	25
26	19.1	16.2	17.1	16.1	16.4	1.301	0.024	33.8	997.1	1021.6	1.2	263	1.4	16.1	289	9.4	278	4.8	275	26
27	20.5	15.4	17.4	16.5	16.8	1.212	0.304	4.0	994.4	1018.9	0.8	272	1.0	14.5	238	0.0	0	3.6	264	27
28	25.2	17.2	20.1	18.0	18.6	0.278	2.020	2.8	989.6	1014.0	0.2	285	0.4	14.5	324	0.0	0	2.8	328	28
29	20.4	18.2	19.1	18.2	18.5	0.001	0.795	17.4	987.9	1012.2	0.5	265	0.6	16.1	261	6.0	272	3.0	330	29
30	24.4	17.4	19.6	17.7	18.2	0.209	1.501	0.2	986.6	1010.9	3.6	234	3.8	30.6	247	15.6	226	12.3	226	30
31	20.2	14.0	16.6	14.2	15.0	1.826	0.127	9.0	990.7	1015.1	5.1	243	5.3	38.6	267	14.5	241	8.9	232	31
	23.2	17.4	19.8	17.8	18.4	0.617	1.755		988.5	1012.8	1.7	221.19	2.1	< Monthly Avg						
NUMBER OF DAYS WITH: >		Maximum Temp ≥ 32.2: 0		Minimum Temp ≤ 0: 0		Precipitation ≥ 0.2 mm: 17		Greatest 24 - hr precipitation: 148.8 Date: 2-3												
		Maximum Temp ≤ 0: 0		Minimum Temp ≤ -17.7: 0		Precipitation ≥ 2.0 mm: 16		Monthly Total Precipitation: 477.6												
SEA LEVEL PRESSURE: >		MAXIMUM: 1023.5		DATE: 26		TIME: 10:51		MONTHLY TOTAL: 8.027		SEASON TO DATE TOTAL: 25.590										
		MINIMUM: 1004.1		DATE: 5		TIME: 18:30		DEGREEE DAYS: >		COOLING: 33.340		SEASON TO DATE TOTAL: 431.517								

MARCH 2022  
Maroota, NSW AUS

APRIL 2022

LOCAL CLIMATOLOGICAL DATA

DAVIS INSTRUMENTS, WEATHERLINK NETWORK

Maroota, NSW AUS  
Hodgson Quarries - Maroota



Lat: -33.4650 Long: 151.0008 Elev (ground): 205 m Time Zone: Australia/Sydney

TEMPERATURE °C						DEG DAYS BASE 18.3°		PRECIP. (mm)	PRESSURE (hPa)		WIND SPEED = km/h DIR = DEGREES								Date	
Date	MAXIMUM	MINIMUM	AVERAGE	AVERAGE DEW PT	AVERAGE WET BULB	HEATING	COOLING	WATER EQUIV	AVERAGE STATION	AVERAGE SEA LEVEL	RESULTANT SPEED	RES DIR	AVERAGE SPEED	WIND MAX						
														INSTANT		2 - MIN		ARCHIVE		
														SPEED	DIR	SPEED	DIR	SPEED		DIR
01	17.3	12.7	14.9	11.2	12.5	3.461	0.000	1.6	992.2	1016.6	4.9	260	5.3	40.2	260	18.3	255	13.8	253	01
02	21.2	14.5	16.9	11.1	13.0	1.917	0.479	0.0	989.5	1013.9	4.1	319	4.4	33.8	242	12.7	302	9.8	325	02
03	24.3	13.1	18.2	10.7	13.0	1.645	1.461	0.0	988.7	1013.1	5.7	19	5.8	29.0	13	0.0	0	13.9	12	03
04	26.4	12.4	19.5	11.3	13.6	1.290	2.408	0.0	989.6	1014.0	2.0	1	2.4	30.6	20	0.0	0	14.9	20	04
05	26.7	11.5	18.8	13.6	15.1	1.748	2.252	0.0	991.8	1016.2	0.3	239	0.8	19.3	130	8.9	160	7.0	159	05
06	19.8	15.8	17.3	15.9	16.3	1.197	0.118	3.2	993.9	1018.3	1.5	286	1.9	24.1	248	11.9	327	10.2	328	06
07	18.2	15.8	16.8	15.9	16.2	1.518	0.000	60.8	995.9	1020.4	1.9	174	2.4	27.4	168	14.9	148	7.1	158	07
08	16.6	16.0	16.3	15.3	15.6	0.343	0.000	1.4	997.3	1021.8	0.0	174	0.0	4.8	158	1.2	182	0.3	161	08
11	28.2	18.7	23.0	17.2	18.6	0.000	2.314	0.0	993.9	1018.4	1.4	249	2.0	19.3	351	11.0	341	7.3	210	11
12	22.8	15.3	17.7	14.8	15.7	1.081	0.476	1.2	996.6	1021.2	0.8	230	1.2	19.3	186	8.4	151	5.2	216	12
13	20.9	14.4	16.1	13.3	14.2	2.428	0.164	4.0	998.7	1023.3	1.3	216	1.7	22.5	274	12.0	236	8.6	150	13
14	22.4	13.3	16.3	13.7	14.6	2.543	0.546	0.8	1001.1	1025.7	0.7	215	1.4	17.7	137	8.2	148	5.8	284	14
15	25.2	11.4	17.2	13.5	14.6	2.487	1.317	0.0	998.8	1023.3	0.5	29	0.9	17.7	30	6.4	356	5.2	69	15
16	24.7	12.8	17.5	13.8	14.9	2.087	1.224	0.0	996.9	1021.4	0.1	235	0.6	16.1	126	0.0	0	7.4	130	16
17	25.4	11.6	17.3	13.7	14.8	2.262	1.269	0.0	995.7	1020.2	1.1	89	1.5	19.3	19	0.0	0	6.8	351	17
18	27.5	12.6	18.8	14.1	15.5	1.841	2.344	0.0	994.0	1018.5	0.4	81	0.5	14.5	98	0.0	0	3.2	87	18
19	27.6	13.3	19.8	14.8	16.2	1.557	3.011	10.4	990.2	1014.6	2.1	72	2.6	59.5	297	39.2	337	21.7	348	19
20	24.7	13.2	17.8	11.7	13.6	1.884	1.403	0.0	991.3	1015.7	2.7	355	3.0	25.7	16	10.6	17	11.9	10	20
21	22.3	9.7	15.6	11.1	12.7	3.116	0.421	0.6	999.3	1023.9	1.7	221	1.9	30.6	211	14.3	205	11.5	206	21
22	17.9	13.3	15.1	13.0	13.8	3.258	0.000	0.6	1005.1	1029.8	0.8	229	0.9	19.3	184	10.3	200	6.6	205	22
23	21.6	13.3	15.9	13.2	14.1	2.866	0.398	1.4	1006.2	1030.9	0.5	217	1.3	19.3	130	8.3	339	6.6	150	23
24	21.3	12.8	16.1	12.8	13.9	2.744	0.484	0.2	1006.2	1031.0	0.7	191	1.2	20.9	148	0.0	0	6.2	153	24
25	20.6	13.0	15.6	13.8	14.4	2.833	0.104	0.6	1003.2	1027.8	0.3	281	0.4	12.9	293	0.0	0	2.7	307	25
26	18.7	13.6	15.7	14.2	14.7	2.652	0.009	0.0	998.3	1022.8	0.4	284	0.5	11.3	257	0.0	0	3.1	327	26
27	17.4	14.1	16.0	15.1	15.4	2.312	0.000	3.0	995.4	1019.9	0.1	291	0.2	8.0	257	3.5	314	2.1	262	27
28	20.4	15.8	17.6	16.6	16.9	0.985	0.237	6.6	995.5	1020.0	0.2	51	0.3	12.9	342	8.3	355	4.7	352	28
29	28.1	15.7	21.2	17.7	18.6	0.551	3.390	0.0	996.2	1020.7	1.0	58	1.1	24.1	13	13.4	17	9.3	32	29
30	20.6	11.2	17.0	15.3	15.8	1.801	0.455	10.4	993.9	1018.4	0.6	33	1.0	29.0	263	13.5	244	7.0	360	30
	22.5	13.6	17.4	13.9	14.9	2.015	1.143		996.3	1020.8	1.4	182.09	1.7	< Monthly Avg						
NUMBER OF DAYS WITH: >						Maximum Temp ≥ 32.2: 0 Minimum Temp ≤ 0: 0		Minimum Temp ≤ -17.7: 0		Precipitation ≥ 0.2 mm: 15 Precipitation ≥ 2.0 mm: 7				Greatest 24 - hr precipitation: 62.2 Date: 7-8 Monthly Total Precipitation: 106.8						
SEA LEVEL PRESSURE: >						MAXIMUM: 1033.0 MINIMUM: 1010.2		DATE 24 TIME 10:27 00:05		DEGREEE DAYS: >				MONTHLY TOTAL 54.407 COOLING: 26.282		SEASON TO DATE TOTAL 79.997 457.799				

APRIL 2022  
Maroota, NSW AUS

MAY 2022

LOCAL CLIMATOLOGICAL DATA

DAVIS INSTRUMENTS, WEATHERLINK NETWORK

Maroota, NSW AUS  
Hodgson Quarries - Maroota



Lat: -33.4650 Long: 151.0008 Elev (ground): 205 m Time Zone: Australia/Sydney

TEMPERATURE °C						DEG DAYS BASE 18.3°		PRECIP. (mm)	PRESSURE (hPa)		WIND SPEED = km/h DIR = DEGREES								Date	
Date	MAXIMUM	MINIMUM	AVERAGE	AVERAGE DEW PT	AVERAGE WET BULB	HEATING	COOLING	WATER EQUIV	AVERAGE STATION	AVERAGE SEA LEVEL	RESULTANT SPEED	RES DIR	AVERAGE SPEED	WIND MAX						
														INSTANT		2 - MIN		ARCHIVE		
														SPEED	DIR	SPEED	DIR	SPEED		DIR
01	21.9	9.8	14.5	11.1	12.3	4.198	0.409	0.0	998.1	1022.7	0.4	300	0.4	12.9	271	0.0	0	4.0	308	01
02	22.4	11.1	15.8	13.2	14.1	3.014	0.530	0.0	998.6	1023.2	0.1	133	0.1	12.9	138	5.6	138	1.8	134	02
03	23.4	10.8	16.4	13.0	14.0	2.870	0.912	0.0	996.1	1020.7	0.6	94	0.6	16.1	91	6.4	17	3.9	35	03
04	25.9	10.8	17.6	13.3	14.5	2.319	1.546	0.0	991.4	1015.8	0.7	50	0.8	19.3	74	11.4	10	4.9	64	04
05	21.5	14.1	17.1	14.0	15.0	1.644	0.459	2.4	989.1	1013.5	0.6	351	1.0	17.7	352	12.3	8	6.2	16	05
06	19.9	9.9	13.6	7.3	9.6	4.896	0.118	0.2	994.1	1018.6	2.1	333	2.3	17.7	266	10.3	340	7.5	327	06
07	18.3	5.4	11.7	5.0	7.6	6.604	0.000	0.0	996.9	1021.4	4.2	344	4.6	32.2	336	21.6	337	16.6	350	07
08	19.8	5.9	12.0	6.6	8.6	6.427	0.057	0.0	999.3	1023.9	1.1	322	1.4	22.5	343	11.1	323	8.5	317	08
09	14.4	9.2	12.7	10.9	11.6	5.645	0.000	8.4	1003.1	1027.8	0.4	285	0.4	16.1	14	5.4	309	3.2	305	09
10	17.8	12.7	14.8	13.3	13.8	3.553	0.000	7.4	1004.8	1029.5	0.4	273	0.4	11.3	254	5.3	315	2.7	301	10
11	16.1	13.3	14.6	13.9	14.2	3.690	0.000	8.6	1002.6	1027.2	0.9	296	1.0	12.9	309	6.4	312	4.8	307	11
12	19.3	14.6	17.0	16.0	16.3	1.462	0.088	7.4	995.6	1020.1	0.6	106	0.8	16.1	103	8.0	98	5.1	99	12
13	19.4	16.3	17.5	16.6	16.9	0.976	0.105	3.0	992.8	1017.3	0.1	121	0.2	11.3	305	6.6	332	3.9	321	13
14	27.7	17.1	20.3	18.1	18.7	0.295	2.229	0.2	990.9	1015.3	0.6	68	0.7	16.1	62	6.2	78	3.9	62	14
15	25.2	16.2	19.5	17.5	18.1	0.515	1.703	0.0	989.1	1013.5	0.5	1	0.6	17.7	22	0.0	0	6.6	353	15
16	23.8	11.1	17.4	12.1	13.8	1.927	0.946	0.0	990.3	1014.7	1.9	349	2.3	17.7	5	7.9	344	7.8	24	16
17	21.3	9.0	14.7	8.5	10.7	3.977	0.376	0.0	994.0	1018.5	2.7	334	2.9	20.9	19	13.9	7	11.5	357	17
18	20.5	6.5	12.9	6.7	9.0	5.564	0.137	0.0	995.3	1019.8	3.2	338	3.5	24.1	299	13.1	328	10.3	317	18
19	16.8	5.8	10.8	5.4	7.5	7.549	0.000	0.0	1001.1	1025.7	1.1	307	1.2	14.5	346	7.6	341	5.9	335	19
20	13.2	7.4	10.8	8.5	9.5	7.488	0.000	0.2	1006.4	1031.1	0.6	273	0.7	16.1	269	5.9	263	3.7	258	20
21	16.7	11.0	13.2	11.8	12.3	5.171	0.000	0.2	1006.1	1030.8	1.1	270	1.2	17.7	259	8.2	256	4.2	254	21
22	14.3	11.6	12.9	12.0	12.4	5.422	0.000	20.0	1003.3	1028.0	0.7	233	0.9	20.9	208	0.0	0	5.5	201	22
23	17.6	10.7	12.8	11.1	11.8	5.507	0.000	5.6	1003.5	1028.1	0.8	238	1.1	17.7	173	6.2	207	4.2	185	23
24	16.4	11.1	12.6	11.3	11.8	5.742	0.000	3.6	1002.7	1027.3	0.7	251	0.8	17.7	169	6.4	174	4.2	261	24
25	19.0	9.9	12.9	11.0	11.7	5.474	0.013	0.2	999.1	1023.7	0.4	299	0.5	12.9	352	2.0	317	4.1	332	25
26	21.1	9.5	14.2	11.9	12.7	4.412	0.299	0.0	995.6	1020.1	0.4	88	0.4	14.5	80	6.6	98	4.3	99	26
27	21.6	9.4	13.9	11.8	12.5	4.789	0.322	0.0	993.1	1017.6	0.1	95	0.1	9.7	103	4.0	106	1.7	105	27
28	20.1	9.8	14.0	11.8	12.5	4.492	0.143	7.4	987.3	1011.6	0.2	346	0.2	59.5	301	3.5	33	5.9	286	28
29	18.0	7.7	11.6	6.8	8.6	6.749	0.000	0.0	983.0	1007.2	3.9	326	4.0	20.9	348	0.0	0	10.1	327	29
30	16.8	6.1	10.4	6.0	7.8	7.907	0.000	4.6	973.0	997.0	6.1	31	6.9	70.8	346	0.0	0	21.1	34	30
31	15.6	9.2	11.8	5.4	7.9	6.581	0.000	0.0	973.2	997.3	15.0	346	15.8	64.4	329	39.4	337	30.4	330	31
														< Monthly Avg						
NUMBER OF DAYS WITH: >		Maximum Temp ≥ 32.2: 0 Maximum Temp ≤ 0: 0				Minimum Temp ≤ 0: 0 Minimum Temp ≤ -17.7: 0			Precipitation ≥ 0.2 mm: 11 Precipitation ≥ 2.0 mm: 10				Greatest 24 - hr precipitation: 13.2 Date: 22-23 Monthly Total Precipitation: 79.4							
SEA LEVEL PRESSURE: >		MAXIMUM: 1033.1 MINIMUM: 989.0		DATE 20 21:20 30 16:29		DEGREEE DAYS: >		HEATING: 136.859 COOLING: 10.392		MONTHLY TOTAL		SEASON TO DATE TOTAL		216.856 468.192						

MAY 2022  
Maroota, NSW AUS

JUNE 2022

LOCAL CLIMATOLOGICAL DATA

DAVIS INSTRUMENTS, WEATHERLINK NETWORK

Maroota, NSW AUS  
Hodgson Quarries - Maroota



Lat: -33.4650 Long: 151.0008 Elev (ground): 205 m Time Zone: Australia/Sydney

TEMPERATURE °C						DEG DAYS BASE 18.3°		PRECIP. (mm)	PRESSURE (hPa)		WIND SPEED = km/h DIR = DEGREES									
Date	MAXIMUM	MINIMUM	AVERAGE	AVERAGE DEW PT	AVERAGE WET BULB	HEATING	COOLING	WATER EQUIV	AVERAGE STATION	AVERAGE SEA LEVEL	RESULTANT SPEED	RES DIR	AVERAGE SPEED	WIND MAX						Date
														INSTANT		2 - MIN		ARCHIVE		
														SPEED	DIR	SPEED	DIR	SPEED	DIR	
01	13.2	6.2	9.5	2.4	5.4	8.796	0.000	0.0	984.9	1009.2	10.4	331	10.5	57.9	309	33.6	334	28.3	337	01
02	15.3	4.4	8.6	4.5	6.3	9.714	0.000	0.0	994.6	1019.1	0.4	325	0.4	12.9	345	6.1	331	4.8	347	02
03	12.8	3.9	8.5	5.8	7.0	9.806	0.000	1.2	990.2	1014.6	2.4	44	2.6	19.3	56	10.6	53	8.7	58	03
04	16.7	7.4	11.2	5.9	8.0	7.155	0.000	0.2	987.7	1012.0	6.6	353	7.1	38.6	324	18.9	357	20.2	323	04
05	15.2	8.3	11.4	6.3	8.3	6.927	0.000	0.0	986.4	1010.7	8.7	35	9.1	40.2	15	0.0	0	22.5	11	05
06	15.6	8.1	11.3	4.2	7.1	6.994	0.000	1.0	983.2	1007.4	10.0	354	10.9	53.1	300	0.0	0	29.8	333	06
07	14.7	7.1	10.4	4.0	6.7	7.921	0.000	0.0	987.0	1011.3	10.5	348	10.8	51.5	340	33.6	342	24.4	344	07
08	14.2	4.6	8.8	1.9	4.9	9.543	0.000	0.0	990.3	1014.7	7.1	332	7.2	35.4	300	23.4	347	16.5	339	08
09	15.0	4.7	9.1	2.7	5.4	9.263	0.000	0.0	989.7	1014.1	7.7	341	8.0	37.0	317	24.1	340	19.2	341	09
10	16.4	6.3	10.4	4.0	6.6	7.888	0.000	0.0	990.0	1014.4	5.7	336	5.9	33.8	332	22.3	345	18.8	333	10
11	15.5	5.5	10.1	3.2	6.0	8.246	0.000	0.0	989.7	1014.1	7.2	332	7.3	41.8	335	18.3	353	20.4	330	11
12	15.8	5.7	10.9	3.8	6.7	7.446	0.000	0.0	989.0	1013.3	7.9	329	8.1	43.5	321	0.0	0	20.7	327	12
13	16.4	2.7	8.6	4.2	6.0	9.760	0.000	0.0	996.3	1020.8	0.2	288	0.3	12.9	274	0.0	0	3.2	254	13
14	16.4	2.5	9.1	5.3	6.8	9.215	0.000	0.0	997.8	1022.4	1.2	47	1.3	17.7	41	9.0	37	6.7	58	14
15	18.2	5.7	12.5	5.6	8.2	5.868	0.000	0.0	994.5	1019.0	7.0	25	7.1	29.0	27	17.5	22	14.9	26	15
16	19.1	9.4	13.6	7.0	9.4	4.774	0.024	0.0	992.8	1017.2	4.3	3	5.0	29.0	306	16.2	25	12.6	19	16
17	17.9	6.3	11.7	7.0	8.8	6.683	0.000	0.0	994.9	1019.4	0.9	312	1.2	19.3	260	9.0	275	6.5	349	17
18	17.8	7.9	12.1	7.8	9.5	6.274	0.000	0.0	1000.0	1024.6	1.1	251	1.2	25.7	275	10.3	257	7.8	248	18
19	17.4	7.8	11.7	8.4	9.7	6.648	0.000	0.0	1001.5	1026.1	0.4	269	0.5	16.1	280	0.0	0	4.0	321	19
20	16.2	8.5	11.8	9.9	10.6	6.573	0.000	0.4	998.9	1023.4	0.3	279	0.4	12.9	254	0.0	0	2.9	264	20
21	8.8	5.7	7.0	6.1	6.5	4.005	0.000	0.2	996.8	1021.3	0.0	69	0.0	6.4	65	0.0	0	0.7	69	21
22	17.5	5.6	11.7	6.3	8.4	4.394	0.000	2.0	999.7	1024.3	0.8	304	0.9	27.4	350	7.8	320	5.1	309	22
23	18.5	3.9	10.5	6.4	8.0	7.801	0.000	0.0	998.3	1022.9	0.4	329	0.5	12.9	360	7.0	335	3.3	303	23
24	17.7	4.9	12.1	6.8	8.8	6.198	0.000	0.0	994.6	1019.1	2.9	7	3.1	24.1	360	18.0	358	13.7	346	24
25	18.9	8.6	13.4	7.7	9.8	4.928	0.026	0.0	996.9	1021.5	4.5	0	4.7	29.0	352	14.4	15	14.0	11	25
26	19.3	9.1	13.4	7.9	9.9	4.992	0.039	0.0	999.2	1023.8	2.5	17	2.7	20.9	20	0.0	0	10.5	19	26
27	14.4	6.3	10.1	4.5	6.9	8.271	0.000	0.0	1001.9	1026.5	1.6	249	1.8	43.5	242	12.4	248	8.7	251	27
28	13.7	5.3	9.3	5.3	7.1	9.053	0.000	0.0	1004.8	1029.4	0.8	288	1.0	19.3	323	11.5	326	6.7	318	28
29	16.3	5.9	11.0	7.3	8.7	7.319	0.000	0.0	1000.3	1024.9	1.5	56	1.8	20.9	47	11.7	43	7.9	53	29
30	15.7	10.1	12.2	7.3	9.2	6.167	0.000	0.0	998.7	1023.3	0.4	318	0.7	12.9	30	6.2	329	5.0	342	30
	16.0	6.3	10.7	5.6	7.7	7.287	0.030		994.3	1018.8	3.8	219.03	4.1	< Monthly Avg						
NUMBER OF DAYS WITH: >						Maximum Temp ≥ 32.2: 0		Minimum Temp ≤ 0: 0		Precipitation ≥ 0.2 mm: 4				Greatest 24 - hr precipitation: 2.2 Date: 21-22						
						Maximum Temp ≤ 0: 0		Minimum Temp ≤ -17.7: 0		Precipitation ≥ 2.0 mm: 0				Monthly Total Precipitation: 5.0						
SEA LEVEL PRESSURE: >						MAXIMUM: 1031.5		DATE: 28		TIME: 09:37		MONTHLY TOTAL: 218.623				SEASON TO DATE TOTAL: 435.479				
						MINIMUM: 1002.7		DATE: 6		TIME: 03:58		DEGREEE DAYS: >				HEATING: 0.089				
														COOLING: 468.281						

JUNE 2022  
Maroota, NSW AUS

JULY 2022

LOCAL CLIMATOLOGICAL DATA

DAVIS INSTRUMENTS, WEATHERLINK NETWORK

Maroota, NSW AUS

Hodgson Quarries - Maroota

Lat: -33.4650 Long: 151.0008 Elev (ground): 205 m Time Zone: Australia/Sydney



TEMPERATURE °C						DEG DAYS BASE 18.3°		PRECIP. (mm)	PRESSURE (hPa)		WIND SPEED = km/h DIR = DEGREES								Date		
Date	MAXIMUM	MINIMUM	AVERAGE	AVERAGE DEW PT	AVERAGE WET BULB	HEATING	COOLING	WATER EQUIV	AVERAGE STATION	AVERAGE SEA LEVEL	RESULTANT SPEED	RES DIR	AVERAGE SPEED	WIND MAX							
														INSTANT		2 - MIN		ARCHIVE			
														SPEED	DIR	SPEED	DIR	SPEED		DIR	
01	10.4	8.9	9.7	7.4	8.4	8.610	0.000	4.8	999.8	1024.4	0.1	283	0.2	9.7	258	3.1	324	1.9	324	01	
02	13.7	9.6	11.6	10.7	11.1	6.698	0.000	14.8	995.6	1020.1	0.5	248	0.5	14.5	266	2.6	252	4.9	210	02	
03	14.2	12.6	13.5	12.4	12.8	4.865	0.000	103.6	992.1	1016.5	8.5	204	9.0	53.1	165	0.0	0	16.2	218	03	
04	15.0	11.7	13.5	12.5	12.9	4.881	0.000	86.8	990.7	1015.1	4.3	237	5.1	38.6	245	0.0	0	11.7	217	04	
11	15.1	8.4	11.4	8.8	9.9	4.171	0.000	0.0	997.3	1021.9	0.6	283	0.7	16.1	327	9.5	322	6.3	304	11	
12	17.1	5.9	9.8	7.1	8.2	8.499	0.000	1.0	991.6	1016.1	0.8	8	1.0	20.9	360	15.6	358	13.5	355	12	
13	14.0	5.8	9.6	5.9	7.4	8.737	0.000	0.2	988.9	1013.3	1.4	296	1.6	29.0	269	12.3	322	7.8	323	13	
14	13.7	5.7	9.8	5.1	7.1	8.484	0.000	0.0	996.8	1021.3	3.0	254	3.2	37.0	252	16.0	265	12.3	256	14	
15	16.1	3.3	8.3	4.3	6.0	10.059	0.000	0.0	1001.5	1026.1	0.9	312	1.0	16.1	327	8.9	309	6.4	287	15	
16	16.2	2.9	9.5	4.0	6.2	8.784	0.000	0.0	998.1	1022.6	3.7	44	3.8	22.5	57	14.7	22	11.2	55	16	
17	19.1	9.6	14.5	5.0	8.4	3.910	0.069	0.0	990.6	1015.0	11.3	25	12.1	62.8	315	43.3	347	33.5	7	17	
18	15.0	5.5	11.0	3.5	6.5	7.299	0.000	0.0	992.5	1016.9	4.8	326	5.2	38.6	317	25.9	334	20.4	314	18	
19	12.2	5.7	8.4	5.0	6.5	9.944	0.000	2.6	1002.2	1026.8	1.8	243	1.9	27.4	226	12.0	223	9.7	225	19	
20	13.7	7.1	9.6	8.3	8.9	8.698	0.000	1.2	1005.9	1030.6	0.4	275	0.4	12.9	286	4.6	254	2.3	270	20	
21	13.3	8.6	10.6	9.6	10.0	7.774	0.000	26.6	1006.3	1031.0	0.4	239	0.6	14.5	209	6.1	207	3.7	215	21	
22	15.0	9.7	11.7	10.4	10.9	6.672	0.000	5.8	1003.8	1028.4	0.6	221	1.0	22.5	139	9.7	188	6.6	184	22	
23	15.4	9.8	11.7	10.7	11.1	6.633	0.000	3.4	999.8	1024.4	0.4	281	0.4	9.7	258	4.3	309	2.5	316	23	
24	17.3	9.4	12.0	10.2	10.8	6.379	0.000	0.2	997.4	1022.0	0.2	301	0.2	12.9	273	8.7	290	4.3	289	24	
25	18.1	6.6	11.5	9.1	10.0	6.788	0.000	0.4	993.8	1018.2	0.8	69	0.8	17.7	91	0.0	0	5.7	63	25	
26	17.9	8.8	12.2	7.6	9.4	6.166	0.000	2.8	987.1	1011.5	8.2	337	8.8	49.9	337	29.2	327	26.7	324	26	
27	16.4	5.7	10.7	4.4	6.9	7.666	0.000	0.0	992.4	1016.8	4.0	322	4.2	29.0	286	14.9	320	11.4	317	27	
28	18.3	5.8	11.6	6.1	8.2	6.714	0.000	0.0	997.4	1021.9	2.1	319	2.2	20.9	331	13.0	354	8.3	317	28	
29	15.5	5.7	10.6	4.5	7.0	7.780	0.000	0.0	998.8	1023.4	1.5	271	2.1	25.7	244	11.8	246	6.9	247	29	
30	15.9	2.9	8.4	3.5	5.6	9.902	0.000	0.0	1002.0	1026.7	0.4	328	0.7	16.1	14	7.2	328	5.3	325	30	
31	16.4	3.8	10.1	5.8	7.5	8.237	0.000	0.0	997.6	1022.2	2.4	58	2.5	30.6	35	0.0	0	12.1	50	31	
	15.4	7.2	10.9	7.3	8.7	7.374	0.069		996.8	1021.3	2.5	231.45	2.8	< Monthly Avg							
NUMBER OF DAYS WITH:		>		Maximum Temp ≥ 32.2: 0		Minimum Temp ≤ 0: 0		Precipitation ≥ 0.2 mm: 12		Precipitation ≥ 2.0 mm: 9		Greatest 24 - hr precipitation: 86.8 Date: 10-11								Monthly Total Precipitation: 254.2	
SEA LEVEL PRESSURE:		>		MAXIMUM: 1032.6		MINIMUM: 1008.3		DATE: 21		TIME: 09:46		DEGREEE DAYS: >		HEATING: 184.350		COOLING: 0.069		MONTHLY TOTAL: 619.829		SEASON TO DATE TOTAL: 0.069	

JULY 2022  
Maroota, NSW AUS

**AUGUST 2022**

**LOCAL CLIMATOLOGICAL DATA**

DAVIS INSTRUMENTS, WEATHERLINK NETWORK

**Maroota, NSW AUS  
Hodgson Quarries - Maroota**



Lat: -33.4650 Long: 151.0008 Elev (ground): 205 m Time Zone: Australia/Sydney

TEMPERATURE °C						DEG DAYS BASE 18.3°		PRECIP. (mm)	PRESSURE (hPa)		WIND SPEED = km/h DIR = DEGREES								Date		
Date	MAXIMUM	MINIMUM	AVERAGE	AVERAGE DEW PT	AVERAGE WET BULB	HEATING	COOLING	WATER EQUIV	AVERAGE STATION	AVERAGE SEA LEVEL	RESULTANT SPEED	RES DIR	AVERAGE SPEED	WIND MAX							
														INSTANT		2 - MIN		ARCHIVE			
														SPEED	DIR	SPEED	DIR	SPEED		DIR	
01	19.0	9.7	13.7	6.9	9.4	4.690	0.035	0.0	991.9	1016.3	4.7	12	5.8	35.4	355	26.0	346	19.9	354	01	
02	18.4	5.5	11.8	4.5	7.3	6.544	0.001	0.0	993.8	1018.3	2.7	14	3.3	24.1	5	11.2	335	13.2	6	02	
03	22.3	9.1	15.6	9.5	11.6	3.431	0.650	0.0	989.6	1014.0	6.0	52	6.3	35.4	5	21.2	17	15.6	17	03	
04	20.5	15.1	17.7	13.5	14.9	0.968	0.363	8.4	983.5	1007.8	8.9	51	9.3	54.7	20	26.3	44	21.0	53	04	
05	20.1	13.8	16.7	10.5	12.6	1.796	0.221	0.0	980.9	1005.1	7.9	22	8.0	40.2	24	23.5	9	19.3	12	05	
06	17.8	9.7	13.9	6.4	9.1	4.461	0.000	0.0	984.8	1009.1	6.9	343	7.8	38.6	329	25.9	331	19.6	328	06	
07	17.2	8.5	11.5	6.1	8.2	6.845	0.000	0.0	991.2	1015.6	1.8	315	2.3	20.9	334	14.3	320	10.5	318	07	
08	16.3	5.8	10.5	6.3	8.0	7.847	0.000	0.0	996.9	1021.4	1.0	277	1.4	19.3	225	9.9	332	5.7	244	08	
09	14.1	6.2	9.7	6.6	7.9	8.633	0.000	0.0	999.5	1024.1	1.1	276	1.2	24.1	270	0.0	0	8.2	259	09	
10	17.3	8.3	11.0	7.9	9.1	7.359	0.000	0.8	1002.4	1027.1	0.4	249	0.7	16.1	146	0.0	0	4.0	308	10	
11	14.8	6.8	11.2	8.4	9.5	7.122	0.000	0.0	998.2	1022.7	0.7	65	0.7	20.9	90	0.0	0	6.6	62	11	
12	15.0	11.9	12.8	9.7	10.9	5.519	0.000	1.6	992.8	1017.3	2.2	66	2.4	19.3	83	0.0	0	8.1	61	12	
13	18.3	8.7	12.3	8.6	10.0	6.041	0.000	7.8	987.5	1011.9	3.8	1	4.4	37.0	360	0.0	0	14.8	21	13	
14	15.6	8.8	11.4	5.8	8.0	6.888	0.000	0.0	984.9	1009.1	12.1	14	12.4	46.7	349	0.0	0	22.4	10	14	
15	16.7	8.2	12.0	5.6	8.1	6.306	0.000	0.0	984.5	1008.7	9.1	4	9.5	40.2	340	24.9	354	19.3	350	15	
16	17.7	7.7	11.7	5.5	7.9	6.667	0.000	0.0	986.5	1010.8	3.1	350	3.6	24.1	346	15.5	304	11.4	352	16	
17	19.2	4.5	11.3	6.2	8.2	7.036	0.032	0.0	993.6	1018.1	0.8	273	0.9	19.3	327	9.0	293	5.7	305	17	
18	20.7	6.3	13.1	7.8	9.7	5.398	0.204	0.0	990.1	1014.4	1.4	26	1.5	22.5	20	13.2	7	8.9	18	18	
19	18.8	8.9	14.3	7.4	9.9	4.035	0.010	0.0	989.2	1013.6	5.0	340	5.4	40.2	265	24.9	322	20.0	2	19	
20	18.4	6.7	11.9	5.4	8.0	6.433	0.001	0.0	995.5	1020.0	3.7	346	4.3	35.4	348	12.5	3	19.1	326	20	
21	18.2	9.0	12.5	6.6	8.8	5.850	0.000	0.0	1000.5	1025.1	0.9	79	1.7	17.7	74	0.0	0	5.9	106	21	
22	19.5	6.6	13.4	6.5	8.9	5.089	0.124	0.0	994.1	1018.5	6.0	8	6.7	48.3	5	29.9	356	24.7	10	22	
23	20.7	5.6	12.1	6.9	8.8	6.410	0.185	9.6	987.5	1011.9	3.1	16	5.8	41.8	259	22.0	8	18.2	6	23	
24	16.0	5.2	10.0	3.4	6.1	8.343	0.000	0.0	995.1	1019.5	2.1	293	2.4	29.0	342	15.4	319	10.1	259	24	
25	17.7	4.6	11.3	5.7	7.9	7.052	0.000	0.0	997.5	1022.1	1.3	300	1.6	24.1	229	13.2	336	7.4	330	25	
26	16.1	8.7	12.0	8.7	10.0	6.332	0.000	0.0	1002.1	1026.8	1.4	230	1.5	25.7	252	10.8	235	7.1	228	26	
27	15.9	8.3	11.7	9.9	10.6	6.624	0.000	1.4	1003.9	1028.5	0.4	278	0.5	16.1	261	0.0	0	4.8	264	27	
28	20.1	8.8	13.4	10.8	11.7	5.098	0.157	0.2	1003.0	1027.6	1.0	136	1.1	17.7	161	0.0	0	6.0	151	28	
29	19.1	9.3	13.6	11.7	12.4	4.705	0.019	0.4	999.0	1023.6	0.1	8	0.5	19.3	332	0.0	0	5.8	320	29	
30	20.7	13.1	16.9	11.2	13.1	1.924	0.466	0.0	993.1	1017.5	5.5	45	6.7	35.4	68	20.9	47	16.8	56	30	
31	19.9	7.2	13.4	9.4	10.9	4.938	0.041	0.4	998.7	1023.3	1.3	181	1.9	22.5	158	11.3	149	7.4	162	31	
	18.1	8.3	12.7	7.7	9.6	5.690	0.167		993.3	1017.7	3.4	150.68	3.9	< Monthly Avg							
NUMBER OF DAYS WITH:		>		Maximum Temp ≥ 32.2: 0		Minimum Temp ≤ 0: 0		Precipitation ≥ 0.2 mm: 8		Precipitation ≥ 2.0 mm: 3		Greatest 24 - hr precipitation: 9.6 Date: 22-23								Monthly Total Precipitation: 30.6	
SEA LEVEL PRESSURE:		>		MAXIMUM: 1030.2		DATE: 27		TIME: 08:40		DEGREE DAYS: >		HEATING: 176.384		MONTHLY TOTAL: 796.212		SEASON TO DATE TOTAL: 2.578		COOLING: 2.509			

AUGUST 2022  
Maroota, NSW AUS



SEPTEMBER 2022

LOCAL CLIMATOLOGICAL DATA

DAVIS INSTRUMENTS, WEATHERLINK NETWORK

Maroota, NSW AUS

Hodgson Quarries - Maroota

Lat: -33.4650 Long: 151.0008 Elev (ground): 205 m Time Zone: Australia/Sydney



TEMPERATURE °C						DEG DAYS BASE 18.3°		PRECIP. (mm)	PRESSURE (hPa)		WIND SPEED = km/h DIR = DEGREES								Date	
Date	MAXIMUM	MINIMUM	AVERAGE	AVERAGE DEW PT	AVERAGE WET BULB	HEATING	COOLING	WATER EQUIV	AVERAGE STATION	AVERAGE SEA LEVEL	RESULTANT SPEED	RES DIR	AVERAGE SPEED	WIND MAX						
														INSTANT		2 - MIN		ARCHIVE		
														SPEED	DIR	SPEED	DIR	SPEED		DIR
01	21.0	11.6	14.8	12.1	13.0	3.741	0.238	0.6	997.8	1022.3	0.8	110	1.2	17.7	32	8.1	358	5.7	127	01
02	17.2	11.1	13.1	10.3	11.4	5.259	0.000	0.8	997.5	1022.0	1.5	229	1.8	30.6	232	13.3	210	10.3	205	02
03	12.5	8.1	9.7	8.1	8.8	8.603	0.000	11.4	999.2	1023.8	1.9	237	2.0	37.0	242	9.3	254	11.5	217	03
04	16.7	8.8	11.1	8.9	9.8	7.248	0.000	4.0	999.8	1024.4	2.9	225	3.1	30.6	231	0.0	0	13.0	212	04
05	17.8	6.7	11.3	7.2	8.8	7.078	0.000	0.2	998.9	1023.5	1.6	230	1.9	25.7	281	0.0	0	8.6	236	05
06	15.8	7.3	11.2	7.7	9.1	7.102	0.000	0.0	999.9	1024.5	0.6	226	0.9	22.5	173	0.0	0	6.6	196	06
07	17.7	6.6	12.4	9.2	10.4	5.928	0.000	0.0	999.1	1023.7	1.2	129	1.5	19.3	157	0.0	0	6.9	148	07
08	20.6	8.8	14.9	10.6	12.1	3.767	0.293	0.0	993.9	1018.4	2.7	118	2.8	29.0	163	0.0	0	9.0	123	08
09	21.1	12.8	15.2	11.2	12.6	3.313	0.193	2.8	987.8	1012.2	2.1	52	2.4	27.4	34	15.4	22	12.6	21	09
10	20.8	11.7	15.7	10.0	11.9	2.910	0.293	0.2	985.3	1009.6	6.0	360	6.6	29.0	333	10.7	25	14.9	340	10
11	21.5	9.0	14.8	6.2	9.2	4.004	0.434	0.0	989.8	1014.1	3.3	341	3.6	22.5	339	0.0	0	10.5	335	11
12	18.7	6.2	12.7	5.5	8.2	5.638	0.006	0.0	993.5	1018.0	2.1	310	2.4	27.4	325	0.0	0	10.9	321	12
13	15.8	7.8	11.5	6.8	8.7	6.834	0.000	0.0	1000.6	1025.2	1.4	189	1.7	24.1	214	13.0	215	9.4	211	13
14	18.0	7.4	12.2	7.1	9.1	6.173	0.000	0.0	1001.1	1025.7	1.0	150	1.6	20.9	118	9.9	156	5.8	164	14
15	13.1	9.3	11.7	10.2	10.8	6.667	0.000	28.2	990.1	1014.5	0.6	22	1.2	30.6	300	16.1	319	12.2	324	15
16	22.7	11.4	16.6	9.5	11.7	2.629	0.855	0.0	981.5	1005.8	5.9	8	6.4	40.2	315	23.9	358	18.3	323	16
17	20.7	12.5	16.3	7.9	10.7	2.403	0.341	0.2	982.3	1006.6	7.6	2	8.6	45.1	315	20.1	15	19.6	329	17
18	21.2	10.7	15.9	6.6	9.8	2.902	0.469	0.0	986.1	1010.4	9.4	343	9.7	41.8	360	0.0	0	21.2	342	18
19	20.9	10.1	15.0	6.8	9.6	3.821	0.458	0.0	990.6	1015.0	5.1	327	5.3	33.8	248	20.7	309	15.9	338	19
20	21.2	6.9	14.0	8.5	10.5	4.612	0.321	0.0	996.7	1021.2	2.0	117	2.4	22.5	121	12.9	133	8.0	124	20
21	19.3	11.4	15.1	12.3	13.3	3.341	0.067	0.8	994.0	1018.4	0.1	51	0.3	17.7	86	8.9	335	4.5	351	21
22	17.8	13.7	15.1	12.7	13.6	3.260	0.000	13.4	993.1	1017.6	4.2	125	4.3	35.4	109	18.8	134	12.3	119	22
23	19.2	13.4	16.0	13.9	14.6	2.376	0.017	2.8	991.1	1015.5	1.1	124	1.2	22.5	101	13.2	99	8.6	109	23
24	21.8	11.6	15.1	13.0	13.7	3.470	0.231	11.0	987.1	1011.4	0.5	280	1.3	33.8	257	12.6	269	10.3	246	24
25	23.1	9.3	15.0	9.9	11.5	4.090	0.744	0.4	991.0	1015.4	0.5	111	0.9	16.1	146	6.9	28	5.2	142	25
26	20.1	10.9	14.5	11.3	12.4	3.950	0.101	0.0	992.0	1016.4	0.8	147	1.5	19.3	138	10.5	123	6.6	127	26
27	21.7	11.3	15.5	12.2	13.3	3.252	0.435	1.4	988.6	1013.0	0.8	93	1.1	19.3	85	6.9	349	5.7	106	27
28	23.4	11.8	15.6	11.2	12.6	3.444	0.760	2.0	987.2	1011.6	1.3	336	2.4	27.4	245	13.5	321	7.5	4	28
29	18.7	10.6	14.0	11.2	12.2	4.369	0.007	3.0	993.4	1017.9	3.8	241	4.1	40.2	168	20.5	230	14.7	224	29
30	17.2	11.3	13.4	11.0	11.9	4.959	0.000	11.4	999.0	1023.5	3.7	231	3.8	33.8	161	20.2	235	14.0	224	30
	19.2	10.0	14.0	9.6	11.2	4.571	0.330		992.9	1017.4	2.6	182.02	2.9	< Monthly Avg						
NUMBER OF DAYS WITH: >						Maximum Temp ≥ 32.2: 0 Minimum Temp ≤ 0: 0		Minimum Temp ≤ -17.7: 0		Precipitation ≥ 0.2 mm: 15 Precipitation ≥ 2.0 mm: 9				Greatest 24 - hr precipitation: 28.2 Date: 14-15 Monthly Total Precipitation: 94.6						
SEA LEVEL PRESSURE: >						MAXIMUM: 1029.1 MINIMUM: 1003.8		DATE 14 TIME 08:29 02:08		DEGREEE DAYS: >				MONTHLY TOTAL HEATING: 137.144 COOLING: 6.264		SEASON TO DATE TOTAL 933.356 8.841				

SEPTEMBER 2022  
Maroota, NSW AUS

OCTOBER 2022

LOCAL CLIMATOLOGICAL DATA

DAVIS INSTRUMENTS, WEATHERLINK NETWORK

Maroota, NSW AUS

Hodgson Quarries - Maroota

Lat: -33.4650 Long: 151.0008 Elev (ground): 205 m Time Zone: Australia/Sydney



TEMPERATURE °C						DEG DAYS BASE 18.3°		PRECIP. (mm)	PRESSURE (hPa)		WIND SPEED = km/h DIR = DEGREES																		
Date	MAXIMUM	MINIMUM	AVERAGE	AVERAGE DEW PT	AVERAGE WET BULB	HEATING	COOLING	WATER EQUIV	AVERAGE STATION	AVERAGE SEA LEVEL	RESULTANT SPEED	RES DIR	AVERAGE SPEED	WIND MAX						Date									
														INSTANT		2 - MIN		ARCHIVE											
														SPEED	DIR	SPEED	DIR	SPEED	DIR										
01	16.3	10.0	12.0	9.6	10.5	6.286	0.000	0.6	998.1	1022.6	1.2	206	1.8	29.0	231	9.4	257	9.8	220	01									
02	19.3	9.0	12.4	8.7	10.0	5.664	0.017	0.6	994.8	1019.3	0.9	183	1.8	29.0	157	0.0	0	9.1	157	02									
03	19.7	6.7	12.9	8.4	10.0	5.468	0.036	0.2	996.6	1021.1	0.7	111	1.1	14.5	352	0.0	0	7.0	337	03									
04	23.3	7.9	15.6	9.8	11.6	3.774	1.012	0.0	997.3	1021.8	0.9	154	1.1	17.7	137	10.5	148	7.6	152	04									
05	15.1	12.8	13.7	11.9	12.6	4.584	0.000	16.8	1001.0	1025.6	1.0	144	1.1	24.1	158	9.7	155	6.7	143	05									
06	18.0	12.9	15.0	13.3	13.9	3.361	0.000	1.2	997.7	1022.3	0.5	89	0.9	16.1	158	8.7	7	6.9	358	06									
07	20.8	12.7	15.8	14.0	14.6	2.810	0.269	12.8	991.9	1016.3	1.1	83	1.2	20.9	89	10.3	100	7.6	97	07									
08	21.2	13.6	16.8	14.9	15.5	2.124	0.569	52.2	989.9	1014.3	0.2	194	1.0	22.5	225	6.4	2	5.1	214	08									
09	16.6	9.8	12.5	8.9	10.3	5.850	0.000	7.8	995.0	1019.5	4.1	245	4.7	38.6	268	0.0	0	11.2	229	09									
10	16.9	9.0	12.6	9.0	10.3	5.731	0.000	0.0	1001.1	1025.7	2.1	171	2.5	24.1	165	14.7	142	11.2	147	10									
11	17.7	11.3	14.1	10.1	11.5	4.271	0.000	0.0	999.8	1024.3	1.8	157	2.8	24.1	150	13.0	150	8.9	163	11									
12	19.1	10.1	14.5	11.4	12.5	3.806	0.023	0.0	998.7	1023.2	2.0	125	2.6	29.0	135	6.8	329	9.8	133	12									
13	14.5	14.4	14.4	11.2	12.4	0.082	0.000	0.0	999.4	1024.0	2.7	101	2.7	12.9	107	0.0	0	2.9	103	13									
14	23.1	15.2	19.6	9.6	12.6	0.413	1.258	0.0	988.2	1012.5	10.7	333	11.6	45.1	316	29.4	2	24.4	350	14									
15	24.1	9.6	16.4	9.1	11.5	2.904	0.993	0.0	993.6	1018.0	0.3	190	2.7	25.7	156	7.8	333	10.1	153	15									
16	21.9	11.5	16.4	12.3	13.6	2.461	0.523	0.0	994.3	1018.8	1.8	157	2.3	30.6	164	0.0	0	10.7	151	16									
17	18.2	12.8	14.9	11.8	12.9	3.446	0.000	0.8	996.7	1021.2	1.7	197	1.9	25.7	169	0.0	0	6.5	201	17									
18	19.3	11.9	15.6	13.0	13.9	2.828	0.053	0.0	995.8	1020.4	1.2	161	1.6	19.3	147	9.5	148	7.0	143	18									
19	26.0	15.2	18.5	15.3	16.2	1.264	1.444	0.6	993.1	1017.6	0.7	154	1.5	27.4	165	14.3	136	9.9	153	19									
20	20.3	16.3	17.6	16.4	16.8	0.992	0.292	3.8	992.1	1016.5	0.3	155	0.3	16.1	147	5.6	149	3.3	150	20									
21	23.5	16.6	19.0	16.8	17.5	0.519	1.194	1.2	989.6	1014.0	1.4	110	1.5	20.9	150	11.1	126	6.8	101	21									
22	25.7	15.8	19.7	16.4	17.3	0.723	2.102	0.6	988.2	1012.5	3.7	95	3.9	25.7	73	7.7	104	10.8	102	22									
23	23.5	17.1	18.5	16.2	16.9	0.364	0.556	3.0	989.0	1013.3	1.1	131	1.5	20.9	147	0.0	0	4.5	151	23									
24	20.7	15.6	17.8	16.1	16.7	1.023	0.484	14.8	986.3	1010.6	1.1	287	1.6	24.1	309	14.8	329	11.4	325	24									
25	27.1	16.4	20.2	16.0	17.2	0.512	2.396	1.4	980.6	1004.8	3.0	21	3.4	45.1	342	27.2	359	17.1	21	25									
26	27.5	15.7	21.9	14.1	16.2	0.201	3.811	0.0	978.3	1002.4	5.5	347	5.9	37.0	348	7.4	22	17.6	346	26									
27	25.9	17.2	20.5	13.2	15.3	0.065	2.218	7.2	978.4	1002.5	4.9	352	5.5	33.8	348	23.5	357	18.6	331	27									
28	22.9	15.6	18.9	7.8	11.2	0.763	1.356	0.0	979.6	1003.8	15.1	330	15.3	53.1	347	35.7	320	27.6	326	28									
29	24.7	14.8	19.0	6.5	10.2	1.044	1.678	0.0	981.6	1005.8	13.1	331	13.2	46.7	344	29.7	342	22.2	340	29									
30	24.7	11.9	17.5	8.6	11.4	1.928	1.076	0.0	985.5	1009.8	1.3	115	3.5	24.1	138	0.0	0	10.3	157	30									
31	27.6	14.8	21.4	14.7	16.6	0.697	3.733	0.0	975.9	1000.0	8.2	40	8.7	56.3	35	34.2	358	27.4	19	31									
	21.5	13.0	16.6	12.1	13.5	2.450	1.178		991.2	1015.6	3.0	176.47	3.6	< Monthly Avg															
NUMBER OF DAYS WITH:		>		Maximum Temp ≥ 32.2: 0		Minimum Temp ≤ 0: 0		Precipitation ≥ 0.2 mm: 16		Precipitation ≥ 2.0 mm: 8		Greatest 24 - hr precipitation: 18.0 Date: 5-6						Monthly Total Precipitation: 125.6											
SEA LEVEL PRESSURE:		>		MAXIMUM: 1027.8		DATE: 5		TIME: 08:42		DEGREEE DAYS: >		HEATING: 75.959		MONTHLY TOTAL: 75.959		SEASON TO DATE TOTAL: 1009.315		MINIMUM: 991.0		DATE: 1		TIME: 00:00		COOLING: 27.091		MONTHLY TOTAL: 27.091		SEASON TO DATE TOTAL: 35.932	

OCTOBER 2022  
Maroota, NSW AUS

# NOVEMBER 2022 LOCAL CLIMATOLOGICAL DATA

DAVIS INSTRUMENTS, WEATHERLINK NETWORK

## Maroota, NSW AUS Hodgson Quarries - Maroota



Lat: -33.4650 Long: 151.0008 Elev (ground): 205 m Time Zone: Australia/Sydney

TEMPERATURE °C						DEG DAYS BASE 18.3°		PRECIP. (mm)	PRESSURE (hPa)		WIND SPEED = km/h DIR = DEGREES								Date		
Date	MAXIMUM	MINIMUM	AVERAGE	AVERAGE DEW PT	AVERAGE WET BULB	HEATING	COOLING	WATER EQUIV	AVERAGE STATION	AVERAGE SEA LEVEL	RESULTANT SPEED	RES DIR	AVERAGE SPEED	WIND MAX							
														INSTANT		2 - MIN		ARCHIVE			
														SPEED	DIR	SPEED	DIR	SPEED		DIR	
01	21.3	11.2	18.0	9.5	12.1	1.430	1.056	0.6	969.6	993.6	17.1	3	18.2	62.8	28	17.7	49	31.1	5	01	
02	17.8	9.4	12.9	3.1	6.8	5.426	0.000	0.0	981.1	1005.3	14.5	329	14.8	53.1	262	33.0	331	24.7	329	02	
03	21.4	8.6	13.8	5.8	8.6	3.159	0.216	0.0	990.3	1014.6	3.7	318	5.0	32.2	331	20.1	324	15.1	324	03	
04	18.8	12.1	16.2	11.2	12.9	1.471	0.015	0.0	1002.9	1027.5	1.9	144	1.9	20.9	154	10.8	122	6.6	145	04	
05	21.4	9.7	15.7	11.2	12.7	3.193	0.606	0.0	1003.2	1027.9	2.1	139	2.2	27.4	138	4.9	83	9.9	134	05	
06	24.7	11.1	17.3	12.5	14.0	2.517	1.530	0.0	1000.1	1024.7	2.8	133	3.0	35.4	159	0.0	0	12.4	143	06	
07	23.3	12.1	17.3	12.9	14.2	2.097	1.099	0.0	997.6	1022.1	2.7	144	3.4	30.6	150	0.0	0	12.4	144	07	
08	22.8	12.8	17.7	12.6	14.2	1.814	1.148	0.0	996.6	1021.1	2.9	139	3.1	30.6	130	17.3	152	13.3	146	08	
09	22.8	12.1	17.4	11.7	13.5	2.110	1.189	0.0	997.6	1022.1	3.2	143	3.4	32.2	133	0.2	134	13.1	152	09	
10	23.1	11.0	17.3	11.9	13.6	2.329	1.300	0.0	995.9	1020.4	3.4	140	3.6	27.4	144	15.8	130	12.2	128	10	
11	25.6	10.9	18.1	12.7	14.3	1.977	1.747	0.2	989.7	1014.1	2.1	29	2.4	38.6	5	22.0	348	18.0	3	11	
12	27.7	13.8	20.0	15.4	16.6	1.131	2.836	0.6	987.8	1012.2	1.8	153	1.9	27.4	143	0.2	345	9.8	179	12	
13	22.6	16.8	19.2	17.2	17.8	0.396	1.229	5.6	984.5	1008.7	3.5	63	3.8	32.2	39	0.0	0	12.1	58	13	
14	26.6	17.9	21.7	13.2	15.4	0.006	3.386	4.8	978.7	1002.8	10.7	344	11.8	72.4	334	40.3	347	32.6	4	14	
15	25.2	15.3	19.5	10.7	13.3	0.780	1.921	0.0	983.4	1007.6	4.1	325	4.5	49.9	323	27.9	347	12.9	321	15	
16	17.7	9.6	13.0	5.6	8.3	5.365	0.000	5.4	986.2	1010.5	3.5	309	3.9	51.5	292	24.2	332	16.4	334	16	
17	20.4	8.1	13.8	7.5	9.7	4.618	0.053	0.0	989.8	1014.2	1.4	212	2.7	25.7	169	13.2	140	9.8	164	17	
18	20.9	10.6	15.4	9.2	11.3	3.274	0.388	0.0	990.5	1014.9	1.7	189	2.8	24.1	198	13.4	335	9.9	141	18	
19	27.3	10.3	18.5	12.6	14.3	2.338	2.531	0.0	983.8	1008.1	2.3	101	2.9	29.0	60	0.0	0	10.6	154	19	
20	25.4	16.1	21.4	9.7	12.9	0.159	3.227	0.8	975.4	999.5	13.1	330	13.9	66.0	336	0.0	0	34.5	312	20	
21	22.7	13.1	18.1	5.8	9.7	1.425	1.227	0.0	980.7	1004.9	16.6	332	17.2	72.4	316	45.2	330	37.0	329	21	
22	21.7	10.9	15.8	4.3	8.2	3.145	0.639	0.0	987.6	1011.9	13.1	321	13.2	48.3	298	27.1	321	22.7	323	22	
23	26.8	9.5	19.1	9.1	12.0	2.062	2.799	0.0	989.6	1014.0	7.2	327	7.4	40.2	328	25.0	325	17.3	324	23	
24	27.9	12.6	19.2	11.9	14.0	1.273	2.155	0.0	993.0	1017.4	1.3	147	2.5	35.4	168	17.0	140	13.3	147	24	
25	28.3	12.9	19.5	13.6	15.2	1.406	2.584	0.0	992.1	1016.5	0.9	150	2.1	29.0	144	15.0	147	11.5	144	25	
26	23.2	14.7	18.0	13.0	14.5	1.461	1.105	0.0	988.6	1013.0	2.7	151	3.1	32.2	166	16.2	145	13.1	149	26	
27	31.5	14.5	21.4	14.3	16.1	1.043	4.131	0.6	980.1	1004.3	1.7	58	2.6	46.7	281	5.7	99	13.1	310	27	
28	23.4	15.9	18.7	15.0	16.1	0.793	1.124	1.0	982.1	1006.3	2.1	151	2.2	27.4	147	15.0	139	11.2	149	28	
29	25.2	13.4	18.1	11.4	13.4	1.565	1.321	0.0	988.3	1012.7	2.7	193	4.5	41.8	275	19.2	167	13.4	146	29	
30	20.5	13.5	17.2	11.1	13.1	1.534	0.389	0.0	993.2	1017.6	2.1	131	2.2	22.5	139	11.9	138	9.0	117	30	
	23.6	12.3	17.6	10.9	13.0	2.043	1.534		988.7	1013.0	5.0	188.35	5.5	< Monthly Avg							
NUMBER OF DAYS WITH: >						Maximum Temp ≥ 32.2: 0 Minimum Temp ≤ 0: 0		Minimum Temp ≤ 0: 0 Minimum Temp ≤ -17.7: 0		Precipitation ≥ 0.2 mm: 8 Precipitation ≥ 2.0 mm: 3				Greatest 24 - hr precipitation: 10.4 Date: 13-14 Monthly Total Precipitation: 19.6							
SEA LEVEL PRESSURE: >						MAXIMUM: 1029.9 MINIMUM: 987.3		DATE: 5 TIME: 08:36		DEGREEE DAYS: >		HEATING: 61.296 COOLING: 42.951		MONTHLY TOTAL: 61.296 SEASON TO DATE TOTAL: 1070.611		78.884					

NOVEMBER 2022  
Maroota, NSW AUS

**DECEMBER 2022**  
**LOCAL CLIMATOLOGICAL DATA**  
 DAVIS INSTRUMENTS, WEATHERLINK NETWORK

**Maroota, NSW AUS**  
**Hodgson Quarries - Maroota**



Lat: -33.4650 Long: 151.0008 Elev (ground): 205 m Time Zone: Australia/Sydney

TEMPERATURE °C						DEG DAYS BASE 18.3°		PRECIP. (mm)	PRESSURE (hPa)		WIND SPEED = km/h DIR = DEGREES								Date	
Date	MAXIMUM	MINIMUM	AVERAGE	AVERAGE DEW PT	AVERAGE WET BULB	HEATING	COOLING	WATER EQUIV	AVERAGE STATION	AVERAGE SEA LEVEL	RESULTANT SPEED	RES DIR	AVERAGE SPEED	WIND MAX						
														INSTANT		2 - MIN		ARCHIVE		
														SPEED	DIR	SPEED	DIR	SPEED		DIR
01	20.5	14.2	16.7	11.6	13.3	1.976	0.317	0.2	991.4	1015.8	1.6	159	1.6	24.1	142	12.2	152	7.8	166	01
02	21.9	12.4	16.3	11.5	13.0	2.667	0.622	0.4	992.5	1016.9	2.2	165	2.3	30.6	143	13.5	160	11.2	161	02
03	24.8	12.4	17.9	12.5	14.2	1.885	1.448	0.0	993.3	1017.8	2.1	147	2.7	24.1	115	0.3	235	10.3	152	03
04	25.8	12.6	18.9	13.3	14.9	1.462	2.075	0.0	991.3	1015.7	3.2	116	3.4	27.4	157	0.0	0	11.8	114	04
05	33.8	13.2	22.6	15.2	16.9	1.168	5.484	0.0	983.2	1007.5	0.9	96	2.3	37.0	295	13.1	341	9.9	143	05
06	24.2	14.9	19.2	14.1	15.6	0.590	1.464	0.0	983.1	1007.3	2.8	161	3.6	30.6	196	0.0	0	13.4	132	06
07	26.2	13.7	20.1	12.5	14.6	1.153	2.885	0.0	981.2	1005.4	4.4	10	4.5	32.2	355	20.8	2	19.0	360	07
08	26.1	11.8	18.7	9.4	12.2	1.023	1.367	0.0	982.4	1006.6	1.5	303	6.7	33.8	132	21.6	335	14.3	334	08
09	20.3	11.3	15.4	9.2	11.4	3.054	0.159	0.0	989.4	1013.8	2.1	162	2.3	25.7	144	13.3	143	9.8	145	09
10	21.2	13.6	16.8	10.7	12.7	1.971	0.480	0.0	992.5	1016.9	1.7	127	2.0	25.7	164	12.2	138	8.2	137	10
11	32.6	11.5	21.5	14.3	16.1	1.694	4.900	0.0	986.5	1010.8	2.2	97	2.7	22.5	62	12.3	130	9.8	127	11
12	27.2	16.6	22.9	12.9	15.6	0.135	4.681	34.2	978.9	1003.1	9.1	351	11.4	56.3	306	34.8	341	27.1	360	12
13	26.8	11.5	19.2	7.8	11.1	1.678	2.536	0.0	984.4	1008.6	3.8	328	4.8	30.6	22	20.9	321	14.0	330	13
14	22.5	12.1	17.6	6.1	9.7	1.580	0.883	0.0	983.6	1007.9	9.6	322	9.7	49.9	328	31.4	317	24.0	324	14
15	24.6	11.8	16.9	7.3	10.4	2.307	0.896	0.0	984.5	1008.8	2.5	268	5.0	35.4	336	23.2	324	11.2	313	15
16	20.4	11.4	15.3	8.5	10.8	3.237	0.207	1.4	990.1	1014.5	2.8	214	3.5	27.4	190	15.4	155	11.8	205	16
17	20.2	11.2	15.6	9.5	11.6	2.841	0.142	0.0	995.4	1019.9	4.6	221	4.8	37.0	277	16.6	204	13.0	203	17
18	19.6	12.1	15.0	10.7	12.2	3.359	0.036	1.0	997.3	1021.8	4.3	218	4.4	33.8	221	17.3	211	14.5	217	18
19	20.3	11.4	15.4	9.6	11.6	3.148	0.168	1.2	998.6	1023.1	4.5	214	4.7	40.2	135	21.2	199	16.1	198	19
20	19.9	10.9	15.3	9.5	11.5	3.215	0.149	0.0	996.7	1021.3	1.0	171	1.9	24.1	135	12.1	147	7.5	149	20
21	22.9	11.3	16.8	10.7	12.6	2.501	0.955	0.0	993.2	1017.7	2.2	163	3.1	25.7	180	2.6	304	10.8	154	21
22	24.6	11.2	17.0	12.6	13.9	2.520	1.218	1.2	990.5	1014.9	0.6	134	0.9	17.7	154	8.9	157	5.0	161	22
23	29.8	15.5	21.4	16.4	17.7	0.775	3.866	10.6	986.6	1011.0	1.2	145	2.0	30.6	119	18.2	141	15.0	149	23
24	33.2	18.4	24.9	16.2	18.2	0.000	6.584	0.0	986.1	1010.5	1.4	109	3.6	30.6	117	0.0	0	12.7	133	24
25	30.9	19.0	23.2	18.3	19.5	0.000	4.894	0.0	991.5	1016.0	2.7	132	3.3	24.1	157	0.0	0	11.8	149	25
26	32.3	16.6	23.9	16.2	17.9	0.182	5.789	0.0	996.0	1020.5	3.8	127	4.1	32.2	159	0.0	0	14.2	137	26
27	29.2	16.2	22.7	16.9	18.3	0.207	4.531	0.0	997.1	1021.7	4.6	140	4.9	32.2	163	0.0	0	14.3	151	27
28	31.8	16.6	23.9	17.0	18.6	0.123	5.657	0.0	990.6	1015.0	3.5	124	4.0	30.6	161	0.0	0	15.0	133	28
29	22.3	17.8	19.9	17.1	17.9	0.022	1.586	0.6	991.6	1016.0	2.0	191	2.6	17.7	257	0.0	0	6.1	217	29
30	25.6	17.1	20.0	16.4	17.4	0.379	2.045	2.6	993.2	1017.6	3.2	142	3.9	32.2	130	0.0	0	13.6	128	30
31	25.4	16.5	20.5	17.1	18.0	0.393	2.564	0.0	991.4	1015.8	2.4	144	4.0	27.4	154	0.0	0	11.1	139	31
	25.4	13.8	19.1	12.6	14.5	1.629	2.277		989.8	1014.2	3.0	174.25	3.9	< Monthly Avg						
NUMBER OF DAYS WITH:	>	Maximum Temp ≥ 32.2: 4		Minimum Temp ≤ 0: 0		Precipitation ≥ 0.2 mm: 9		Greatest 24 - hr precipitation: 34.2 Date: 11-12												
		Maximum Temp ≤ 0: 0		Minimum Temp ≤ -17.7: 0		Precipitation ≥ 2.0 mm: 3		Monthly Total Precipitation: 53.4												
SEA LEVEL PRESSURE:	>	MAXIMUM: 1024.5		DATE: 19		TIME: 09:17		MONTHLY TOTAL		SEASON TO DATE TOTAL										
		MINIMUM: 999.8		DATE: 12		TIME: 13:59		DEGREEE DAYS: >		HEATING: 47.247		1117.858								
										COOLING: 70.590		149.473								

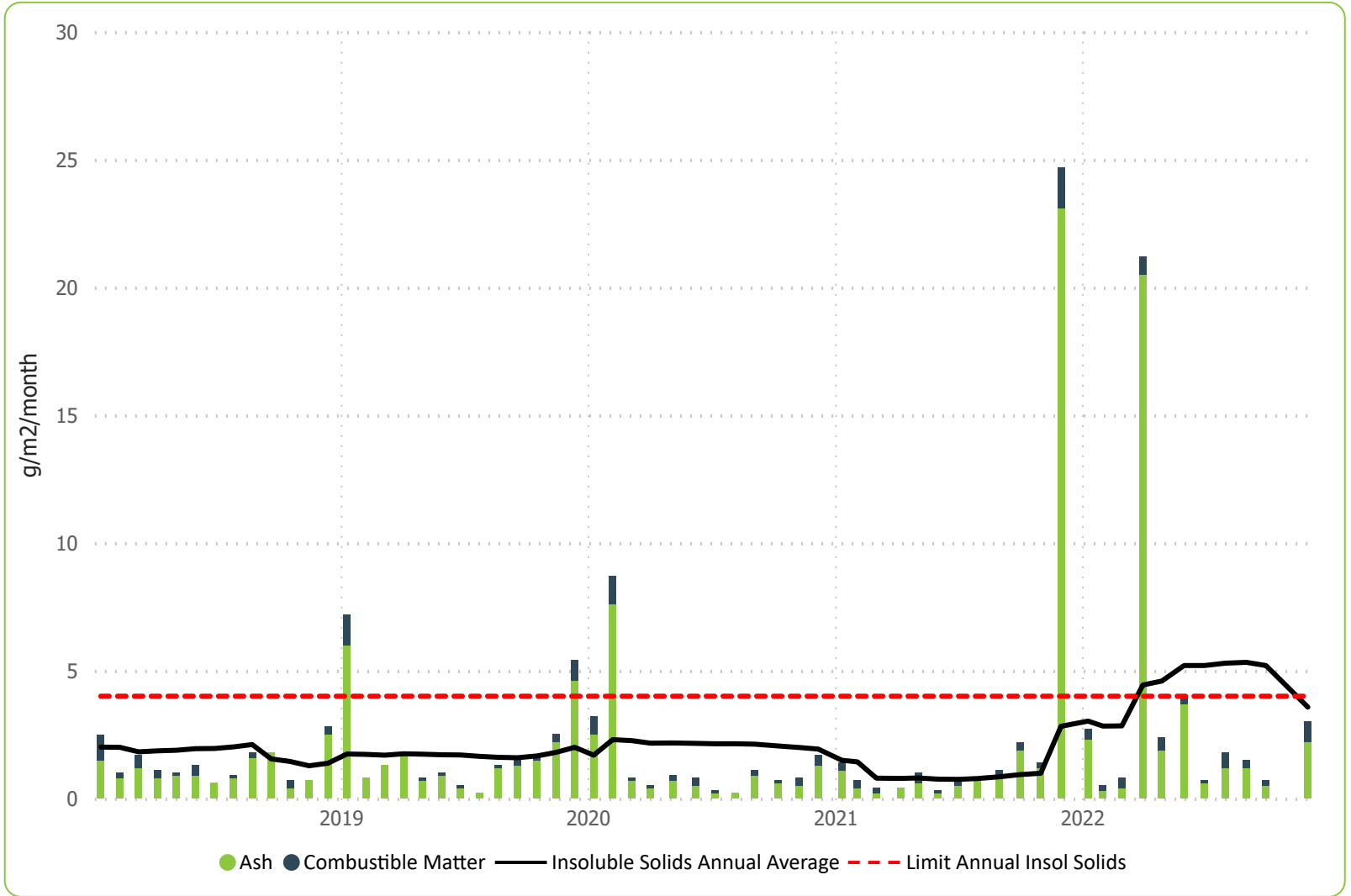
**DECEMBER 2022**  
**Maroota, NSW AUS**

## Appendix I

# Air Monitoring Results

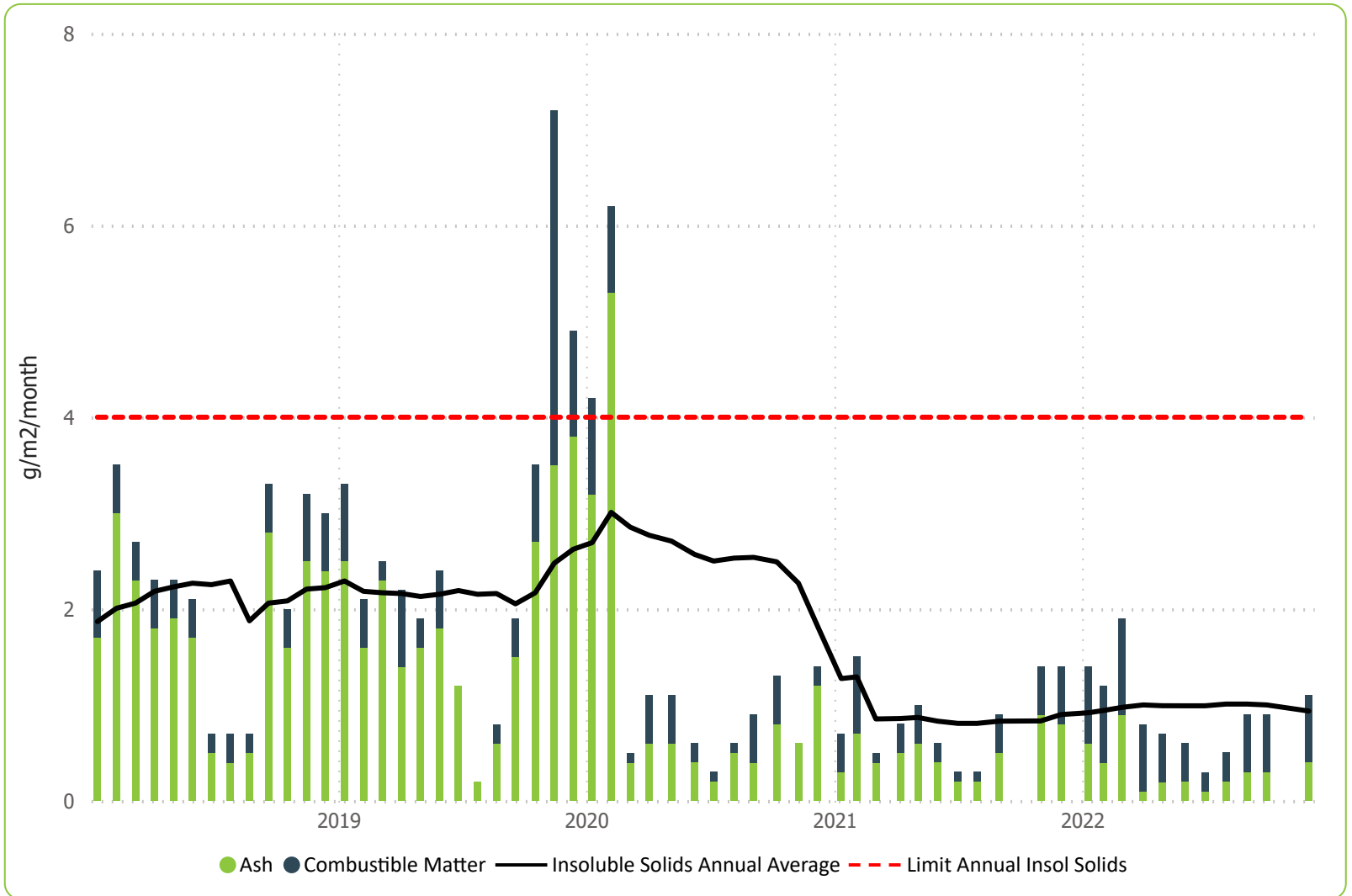


## Insoluble Solids Annual Average g/m<sup>2</sup>/month



Date On	Comments	Date Sampled	Days On	Insoluble Solids	Ash	Combustible Matter	Calculated Rain
10/01/22	Sampled by Melissa Mass	1/02/22	22	0.5	0.3	0.2	47
1/02/22	Sampled by Melissa Mass	1/03/22	28	0.8	0.4	0.4	116
1/03/22	Sampled by Melissa Mass	1/04/22	31	21.2	20.5	0.7	116
1/04/22	Sampled by Melissa Mass	29/04/22	28	2.4	1.9	0.5	110
29/04/22	Sampled by Melissa Mass	1/06/22	33	4.0	3.7	0.3	98
1/06/22	Sampled by Melissa Mass	1/07/22	30	0.7	0.6	0.1	7
1/07/22	Sampled by Melissa Mass.	1/08/22	31	1.8	1.2	0.6	114
	Flooding rainfall event during July.	1/09/22	31	1.5	1.2	0.3	32
1/08/22	Sampled by Melissa Mass.	30/09/22	29	0.7	0.5	0.2	64
1/09/22	Sampled by Melissa Mass.	1/12/22	30	3.0	2.2	0.8	27
1/11/22	Sampled by Melissa Mass.	9/01/23	39	1.1	0.8	0.3	91
1/12/22	Sampled by Melissa Mass.	1/02/23	23	1.7	1.3	0.4	114
9/01/23							

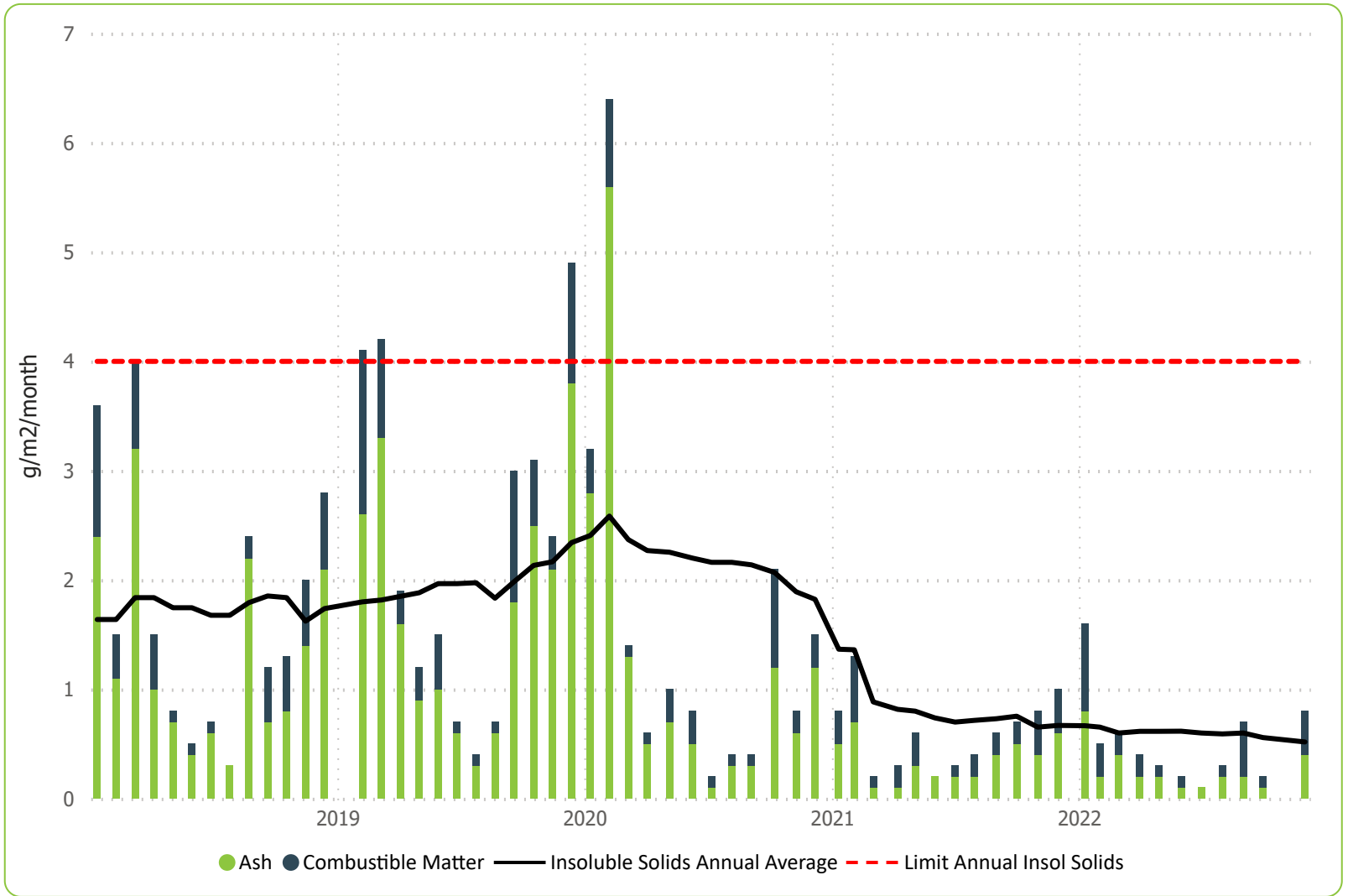
**Insoluble Solids  
Annual Average  
g/m<sup>2</sup>/month**



Date On	Comments	Date Sampled	Days On	Insoluble Solids	Ash	Combustible Matter	Calculated Rain
10/01/22	Sampled by Melissa Mass.	1/02/22	22	1.2	0.4	0.8	33
1/02/22	Sampled by Melissa Mass	1/03/22	28	1.9	0.9	1.0	115
1/03/22	Sampled by Melissa Mass	1/04/22	31	0.8	0.1	0.7	115
1/04/22	Sampled by Melissa Mass	29/04/22	28	0.7	0.2	0.5	88
29/04/22	Sampled by Melissa Mass	1/06/22	33	0.6	0.2	0.4	85
1/06/22	Sampled by Melissa Mass	1/07/22	30	0.3	0.1	0.2	4
1/07/22	Sampled by Melissa Mass.	1/08/22	31	0.5	0.2	0.3	115
	Flooding rainfall event during July.	1/09/22	31	0.9	0.3	0.6	26
1/08/22	Sampled by Melissa Mass.	30/09/22	29	0.9	0.3	0.6	72
1/09/22	Sampled by Melissa Mass.	1/12/22	30	1.1	0.4	0.7	20
1/11/22	Sampled by Melissa Mass.	9/01/23	39	0.6	0.5	0.1	68
1/12/22	Sampled by Melissa Mass.	1/02/23	23	0.8	0.5	0.3	114
9/01/23							

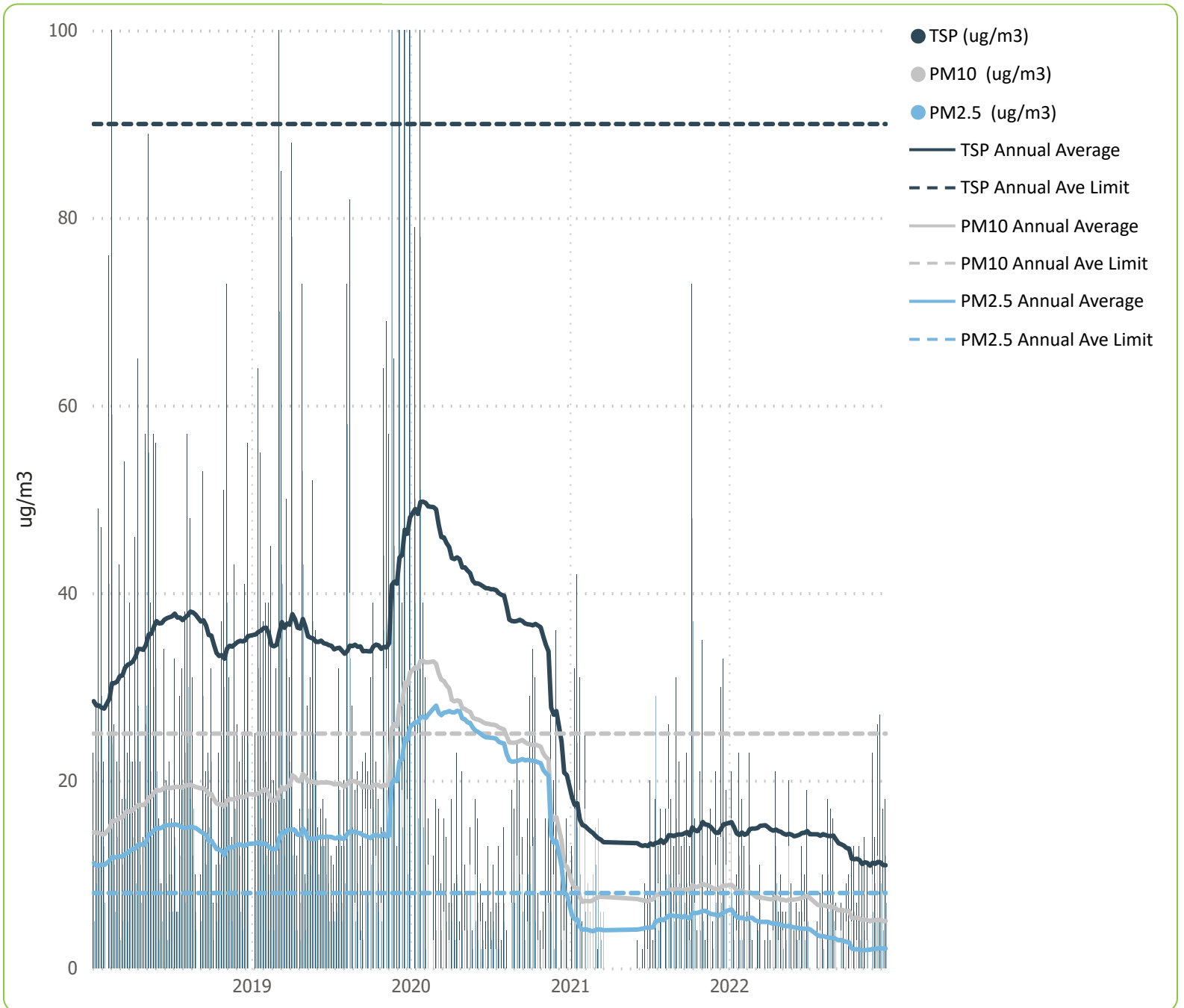
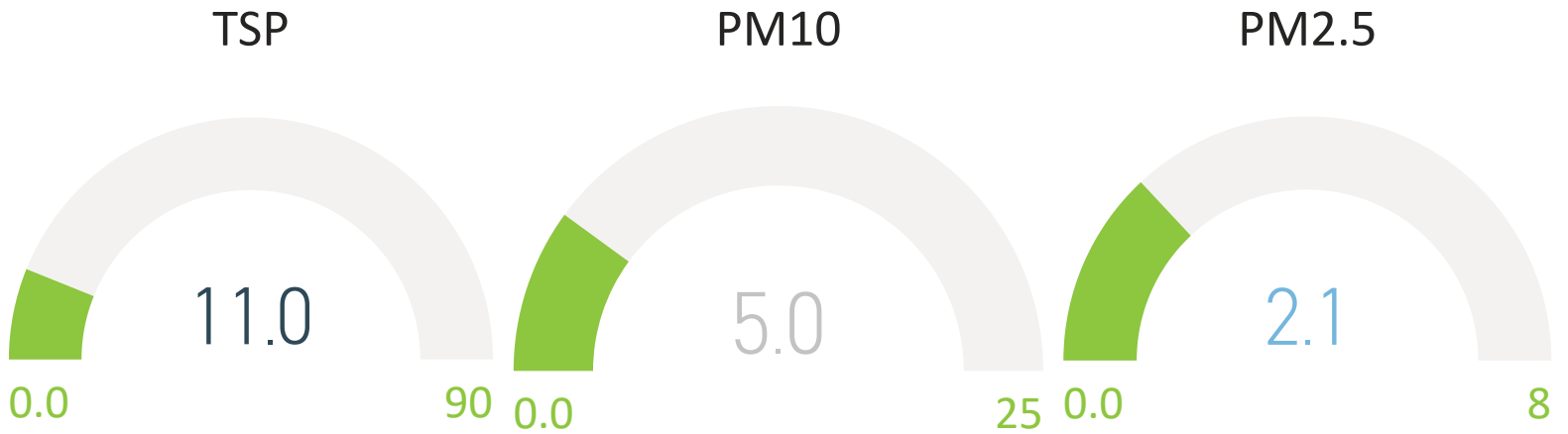


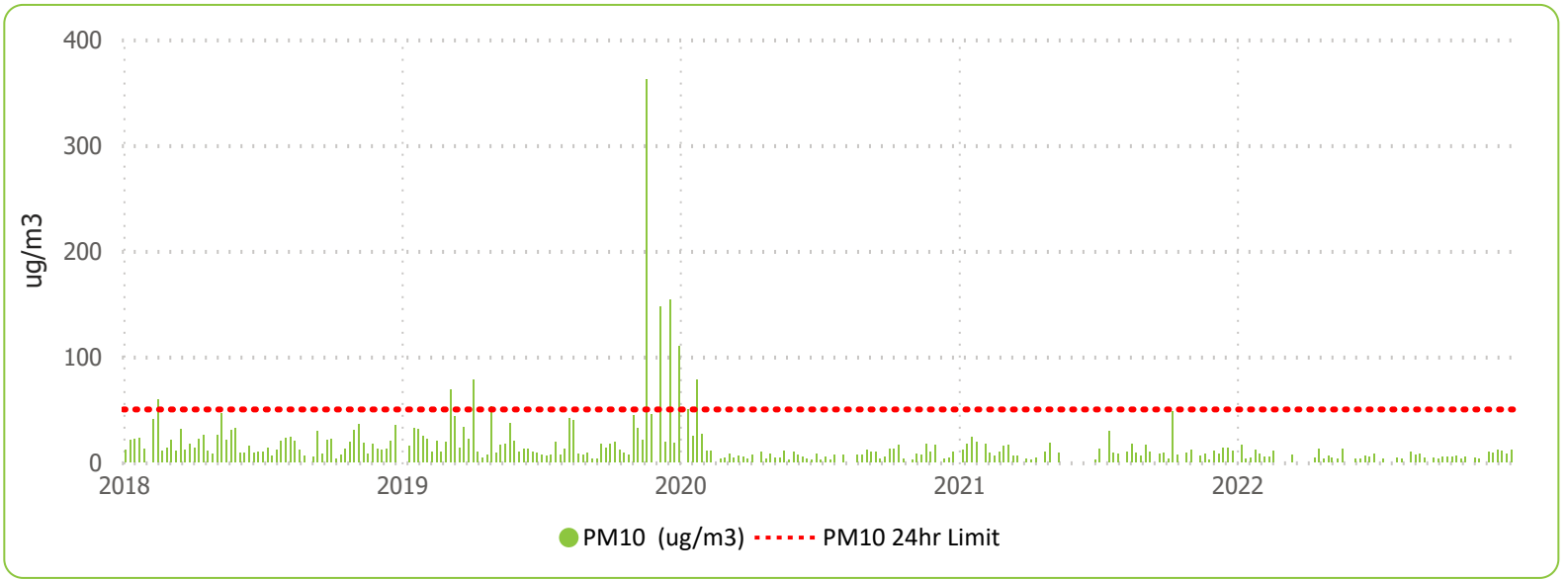
## Insoluble Solids Annual Average g/m<sup>2</sup>/month



Date On	Comments	Date Sampled	Days On	Insoluble Solids	Ash	Combustible Matter	Calculated Rain
10/01/22	Sampled by Melissa Mass	1/02/22	22	0.5	0.2	0.3	44
1/02/22	Sampled by Melissa Mass	1/03/22	28	0.6	0.4	0.2	116
1/03/22	Sampled by Melissa Mass	1/04/22	31	0.4	0.2	0.2	116
1/04/22	Sampled by Melissa Mass	29/04/22	28	0.3	0.2	0.1	108
29/04/22	Sampled by Melissa Mass	1/06/22	33	0.2	0.1	0.1	94
1/06/22	Sampled by Melissa Mass	1/07/22	30	0.1	0.1	0.0	7
1/07/22	Sampled by Melissa Mass.	1/08/22	31	0.3	0.2	0.1	114
	Flooding rainfall event during July.	1/09/22	31	0.7	0.2	0.5	31
1/08/22	Sampled by Melissa Mass.	30/09/22	29	0.2	0.1	0.1	82
1/09/22	Sampled by Melissa Mass.	1/12/22	30	0.8	0.4	0.4	28
1/11/22	Sampled by Melissa Mass.	9/01/23	39	1.4	0.6	0.8	83
1/12/22	Sampled by Melissa Mass.	1/02/23	23	1.5	0.6	0.9	115
9/01/23							



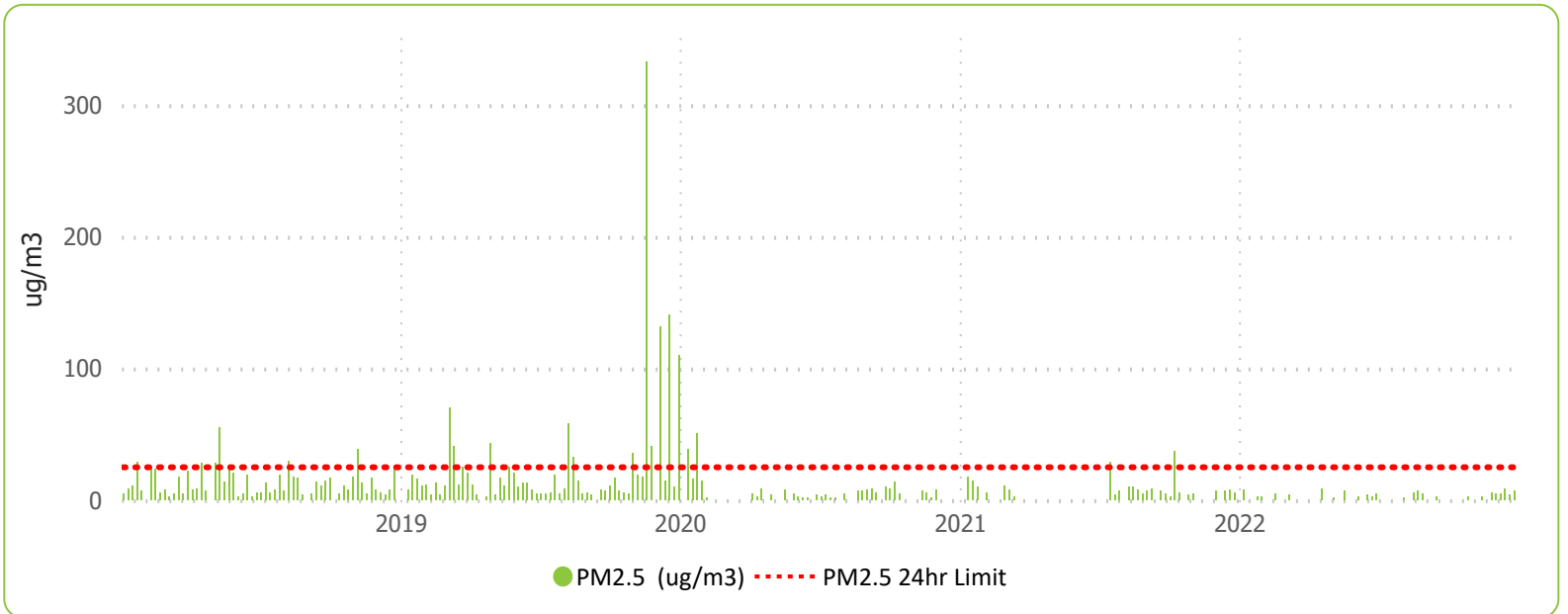




## 24 Hour PM10 Exceedances This Period

Date of Operation    PM10 (ug/m3)    Sampling Comments

---



## 24 Hour PM2.5 Exceedances This Period

Date of Operation    PM2.5 (ug/m3)    Sampling Comments

---

A solid green rectangular graphic element on the left side of the page, partially overlapping the 'Appendix J' text.

## Appendix J

# 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		

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## **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.**

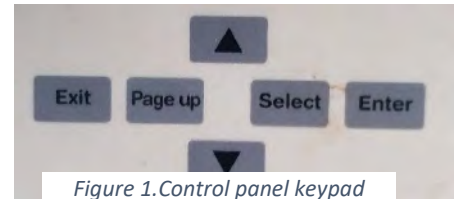


Figure 1. Control panel keypad



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*

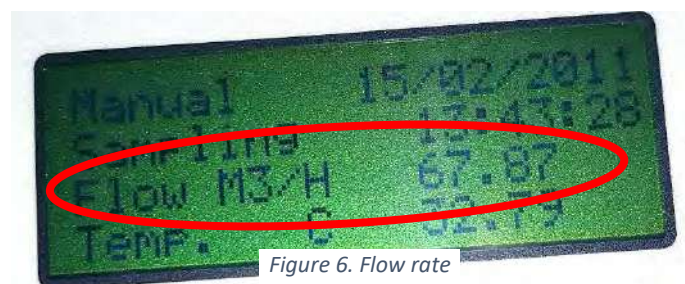
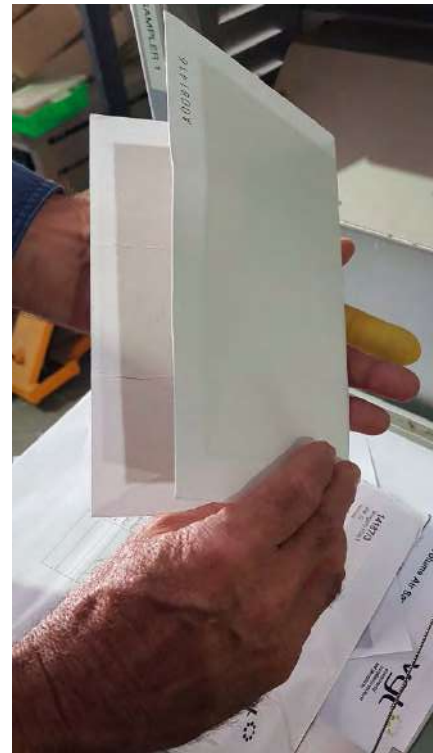



Figure 6. Flow rate

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 (m <sup>3</sup> /min)	67.9
Start Hrs Run	115237
Date and Time On	21/03/2015 14:50
Date Operating (Sampling)	24/03/2015

**Complete After Removing Paper**

Temperature Off (°C)	26.1
Final Flow Rate (m <sup>3</sup> /min)	67.8
End Hrs Run	116677
Date and Time Off	26/03/2015 11:59
Activities on site during sampling period <small>i.e. truck movements, grass cutting, hazard reduction burns</small>	slashing, screening, trail bikes nearby

Figure 7. Example of Filled in Envelope

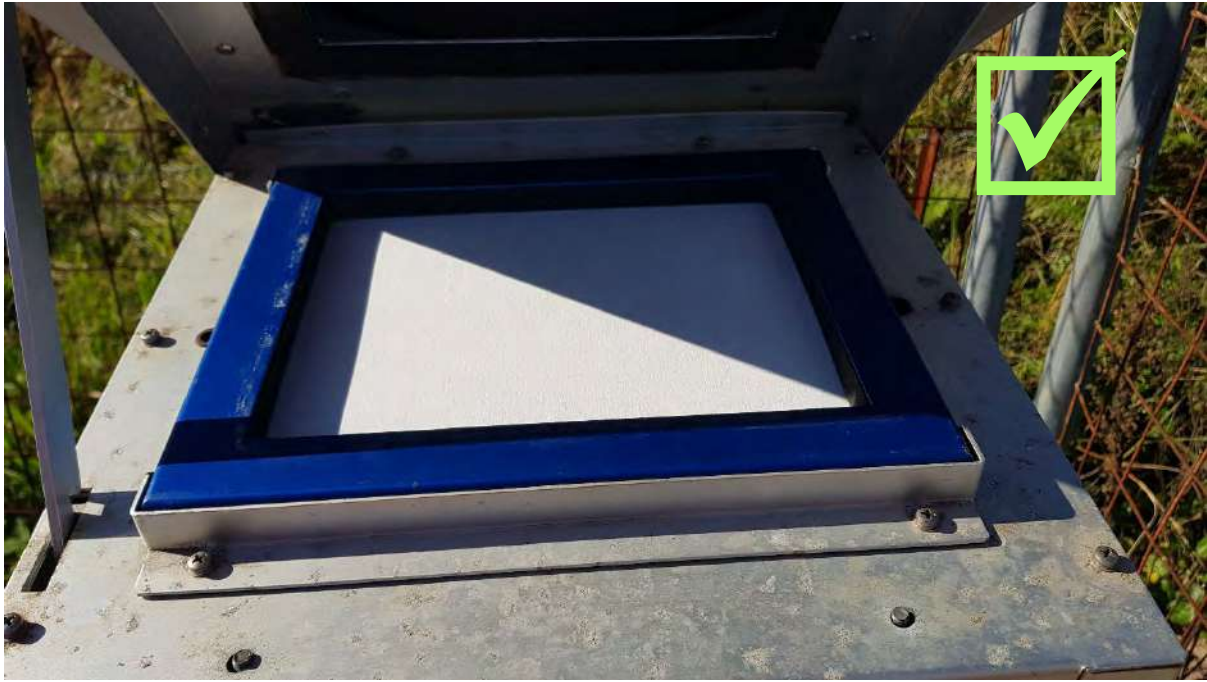


Figure 8. A correctly installed HVAS filter paper



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

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# 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 ± 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.

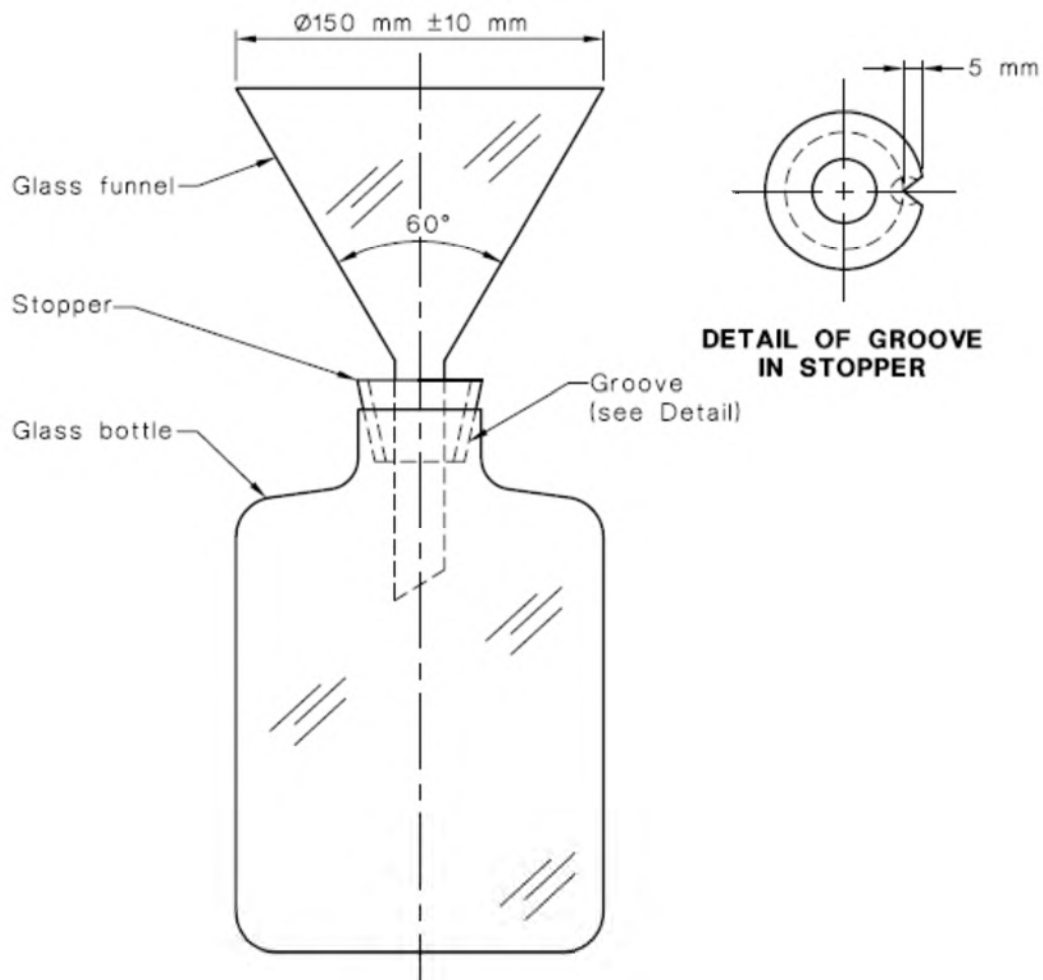


FIGURE 1 TYPICAL STANDARD DEPOSIT GAUGE

(Source: AS3580.10.1)

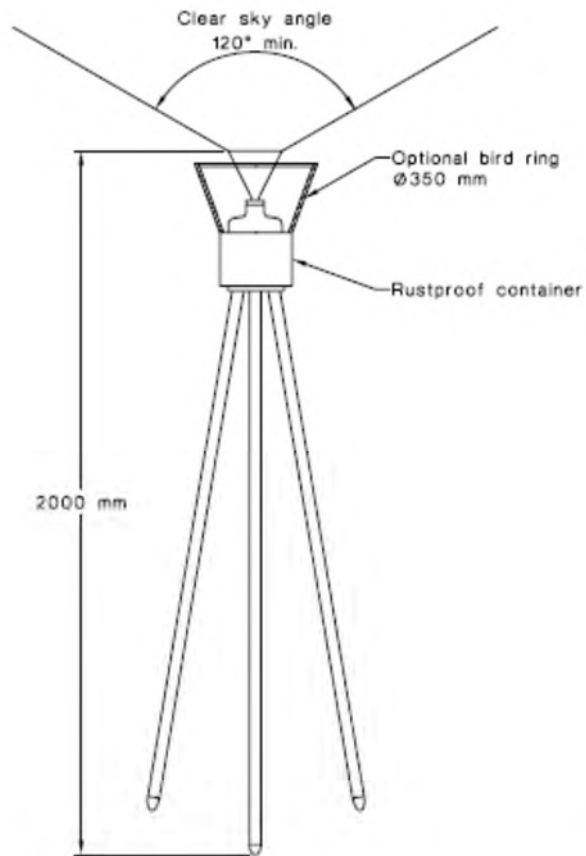


FIGURE 2 TYPICAL STAND WITH DEPOSIT GAUGE

(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.

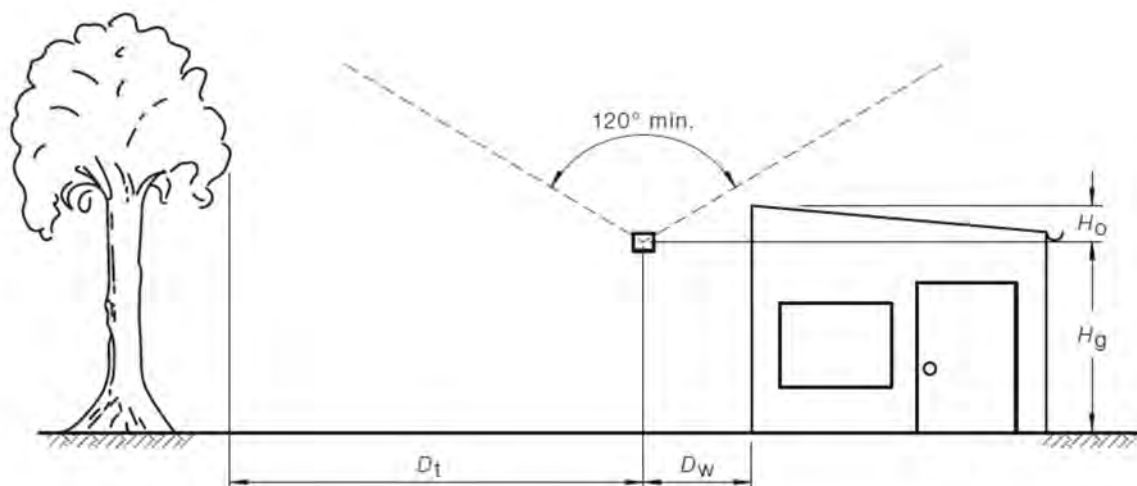
- Become familiar with the physical properties and potential dangers of materials you plan to use. Consider how they may react in combination
- Consider the limitations of the equipment you plan to use.
- Think through any potential hazards associated with your work and plan your response *before* commencing 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 be 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

$120^\circ$  = 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  $30 \pm 2$  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 K Pumping Records

Date	Start	Finish	Hours	Litres @ 120/min	Day
1/01/2022			0	0	<b>Saturday</b>
2/01/2022			0	0	<b>Sunday</b>
3/01/2022			0	0	Monday
4/01/2022	7.00	3.00	8	57600	Tuesday
5/01/2022	7.00	2.00	7	50400	Wednesday
6/01/2022	7.00	2.30	7.5	54000	Thursday
7/01/2022	7.00	2.30	7.5	54000	Friday
8/01/2022	7.00	12.00	5	36000	Saturday
9/01/2022			0	0	Sunday
10/01/2022	9.00	5.00	8	57600	Monday
11/01/2022	9.00	5.00	8	57600	Tuesday
12/01/2022	9.00	5.00	8	57600	Wednesday
13/01/2022	10.00	3.00	5	36000	Thursday
14/01/2022	11.00	4.00	5	36000	Friday
15/01/2022	7.00	12.00	6	43200	Saturday
16/01/2022			0	0	Sunday
17/01/2022	8.30	2.30	6	43200	Monday
18/01/2022			0	0	Tuesday
19/01/2022			0	0	Wednesday
20/01/2022	7.30	2.30	7	50400	Thursday
21/01/2022	7.30	2.30	7	50400	Friday
22/01/2022			0	0	Saturday
23/01/2022			0	0	Sunday
24/01/2022	7.00	5.00	9	64800	Monday
25/01/2022	7.00	5.00	9	64800	Tuesday
26/01/2022			0	0	<b>Wednesday</b>
27/01/2022	12.00	4.30	4.5	32400	Thursday
28/01/2022	10.00	3.00	5	36000	Friday
29/01/2022	6.00	12.00	6	43200	Saturday
30/01/2022			0	0	Sunday
31/01/2022	7.00	2.30	7.5	54000	Monday
1/02/2022	7.00	2.30	7.5	54000	Tuesday
2/02/2022	7.30	3.00	7.5	54000	Wednesday
3/02/2022	7.00	2.30	7.5	54000	Thursday
4/02/2022	7.00	2.30	7.5	54000	Friday
5/02/2022	7.00	1.00	6	43200	Saturday
6/02/2022			0	0	Sunday
7/02/2022	12.00	4.00	4	28800	Monday
8/02/2022	8.30	2.30	6	43200	Tuesday
9/02/2022	9.00	5.00	8	57600	Wednesday
10/02/2022	7.00	5.00	9	64800	Thursday
11/02/2022	10.00	3.00	5	36000	Friday
12/02/2022	7.00	1.00	6	43200	Saturday
13/02/2022			0	0	Sunday
14/02/2022	8.00	4.00	8	57600	Monday
15/02/2022	8.00	5.00	9	64800	Tuesday
16/02/2022	6.30	2.30	8	57600	Wednesday
17/02/2022	7.00	3.00	8	57600	Thursday
18/02/2022	6.00	2.00	8	57600	Friday

Date	Start	Finish	Hours	Litres @ 120/min	Day
19/02/2022	6.00	12.00	6	43200	Saturday
20/02/2022			0	0	Sunday
21/02/2022			0	0	Monday
22/02/2022			0	0	Tuesday
23/02/2022			0	0	Wednesday
24/02/2022	11.00	4.00	5	36000	Thursday
25/02/2022	8.30	2.30	6	43200	Friday
26/02/2022	7.00	12.00	5	36000	Saturday
27/02/2022			0	0	Sunday
28/02/2022	7.00	9.00	2	14400	Monday
1/03/2022	11.00	4.00	5	36000	Tuesday
2/03/2022	7.30	2.30	7	50400	Wednesday
3/03/2022	7.30	2.30	7	50400	Thursday
4/03/2022	7.30	2.30	7	50400	Friday
5/03/2022			0	0	Saturday
6/03/2022			0	0	Sunday
7/03/2022	7.00	3.00	8	57600	Monday
8/03/2022	9.00	5.00	8	57600	Tuesday
9/03/2022	8.30	4.30	8	57600	Wednesday
10/03/2022	8.30	4.30	8	57600	Thursday
11/03/2022	8.30	4.30	8	57600	Friday
12/03/2022	7.00	12.00	5	36000	Saturday
13/03/2022			0	0	Sunday
14/03/2022	9.30	1.30	4	28800	Monday
15/03/2022	8.30	2.30	6	43200	Tuesday
16/03/2022	8.00	3.00	7	50400	Wednesday
17/03/2022	7.30	2.30	7	50400	Thursday
18/03/2022	8.00	3.00	7	50400	Friday
19/03/2022	8.00	12.00	4	28800	Saturday
20/03/2022			0	0	Sunday
21/03/2022	9.00	3.00	6	43200	Monday
22/03/2022	8.00	2.00	6	43200	Tuesday
23/03/2022	7.30	3.30	8	57600	Wednesday
24/03/2022	7.00	5.00	9	64800	Thursday
25/03/2022	12.00	2.00	2	14400	Friday
26/03/2022	8.30	12.30	4	28800	Saturday
27/03/2022			0	0	Sunday
28/03/2022	9.00	3.00	6	43200	Monday
29/03/2022	8.00	2.00	6	43200	Tuesday
30/03/2022	8.00	2.00	6	43200	Wednesday
31/03/2022	8.30	2.30	6	43200	Thursday
1/04/2022	8.00	2.00	6	43200	Friday
2/04/2022	7.00	1.00	6	43200	Saturday
3/04/2022			0	0	Sunday
4/04/2022			0	0	Monday
5/04/2022			0	0	Tuesday
6/04/2022			0	0	Wednesday
7/04/2022			0	0	Thursday
8/04/2022	11.30	4.30	5	36000	Friday

Date	Start	Finish	Hours	Litres @ 120/min	Day
9/04/2022	7.00	12.00	5	36000	Saturday
10/04/2022			0	0	Sunday
11/04/2022	8.00	3.30	7.5	54000	Monday
12/04/2022			6.5	46800	Tuesday
13/04/2022	8.00	4.00	8	57600	Wednesday
14/04/2022	11.00	4.00	5	36000	Thursday
15/04/2022			0	0	<b>Friday</b>
16/04/2022			0	0	<b>Saturday</b>
17/04/2022			0	0	Sunday
18/04/2022			0	0	<b>Monday</b>
19/04/2022	7.00	12.30	5.5	39600	Tuesday
20/04/2022	10.00	4.00	6	43200	Wednesday
21/04/2022	8.00	3.30	7.5	54000	Thursday
22/04/2022	8.00	4.00	8	57600	Friday
23/04/2022	7.00	11.00	4	28800	Saturday
24/04/2022			0	0	Sunday
25/04/2022			0	0	<b>Monday</b>
26/04/2022	10.00	3.00	5	36000	Tuesday
27/04/2022	10.00	3.00	5	36000	Wednesday
28/04/2022	9.00	3.00	6	43200	Thursday
29/04/2022	8.00	3.30	7.5	54000	Friday
30/04/2022			0	0	Saturday
1/05/2022			0	0	Sunday
2/05/2022	12.00	4.00	4	28800	Monday
3/05/2022	9.30	2.30	5	36000	Tuesday
4/05/2022	9.00	3.00	6	43200	Wednesday
5/05/2022	11.00	5.00	6	43200	Thursday
6/05/2022	8.30	2.30	6	43200	Friday
7/05/2022	6.30	12.30	6	43200	Saturday
8/05/2022			0	0	Sunday
9/05/2022	7.00	12.30	5.5	39600	Monday
10/05/2022	8.30	1.30	5.5	39600	Tuesday
11/05/2022	7.00	12.30	5.5	39600	Wednesday
12/05/2022	7.30	1.00	5.5	39600	Thursday
13/05/2022	7.30	1.00	5.5	39600	Friday
14/05/2022	7.00	12.30	5.5	39600	Saturday
15/05/2022			0	0	Sunday
16/05/2022	8.00	4.00	8	57600	Monday
17/05/2022			0	0	Tuesday
18/05/2022	8.00	3.30	7.5	54000	Wednesday
19/05/2022	8.30	4.00	7.5	54000	Thursday
20/05/2022	8.30	4.00	7.5	54000	Friday
21/05/2022	7.00	9.00	2	14400	Saturday
22/05/2022			0	0	Sunday
23/05/2022	8.00	4.00	8	57600	Monday
24/05/2022	8.00	4.00	8	57600	Tuesday
25/05/2022	8.00	4.00	8	57600	Wednesday
26/05/2022	8.00	4.00	8	57600	Thursday
27/05/2022	8.00	4.00	8	57600	Friday

Date	Start	Finish	Hours	Litres @ 120/min	Day
28/05/2022			0	0	Saturday
29/05/2022			0	0	Sunday
30/05/2022	10.00	4.30	6.5	46800	Monday
31/05/2022	8.00	3.00	7	50400	Tuesday
1/06/2022	8.00	3.00	7	50400	Wednesday
2/06/2022	7.30	2.30	7	50400	Thursday
3/06/2022	7.00	2.00	7	50400	Friday
4/06/2022	9.30	12.30	3	21600	Saturday
5/06/2022			0	0	Sunday
6/06/2022			0	0	Monday
7/06/2022			0	0	Tuesday
8/06/2022			0	0	Wednesday
9/06/2022	10.00	1.00	3	21600	Thursday
10/06/2022			1	7200	Friday
11/06/2022			0	0	Saturday
12/06/2022			0	0	Sunday
13/06/2022			0	0	<b>Monday</b>
14/06/2022	7.00	5.00	9	64800	Tuesday
15/06/2022	7.00	5.00	9	64800	Wednesday
16/06/2022	9.00	5.00	8	57600	Thursday
17/06/2022	7.30	2.30	7	50400	Friday
18/06/2022			0	0	Saturday
19/06/2022			0	0	Sunday
20/06/2022	8.00	3.30	7.5	54000	Monday
21/06/2022	8.00	3.30	7.5	54000	Tuesday
22/06/2022	8.00	3.30	7.5	54000	Wednesday
23/06/2022	8.00	3.30	7.5	54000	Thursday
24/06/2022	8.00	3.30	7.5	54000	Friday
25/06/2022	7.00	11.00	4	28800	Saturday
26/06/2022			0	0	Sunday
27/06/2022	11.00	4.00	5	36000	Monday
28/06/2022	11.30	4.30	5	36000	Tuesday
29/06/2022	9.00	2.00	5	36000	Wednesday
30/06/2022	9.00	2.00	5	36000	Thursday
1/07/2022	9.00	2.00	5	36000	Friday
2/07/2022	8.00	12.00	4	28800	Saturday
3/07/2022			0	0	Sunday
4/07/2022	8.00	3.00	7	50400	Monday
5/07/2022			0	0	Tuesday
6/07/2022			0	0	Wednesday
7/07/2022			0	0	Thursday
8/07/2022			0	0	Friday
9/07/2022			0	0	Saturday
10/07/2022			0	0	Sunday
11/07/2022	8.00	4.00	8	57600	Monday
12/07/2022	8.30	4.30	8	57600	Tuesday
13/07/2022	9.00	5.00	8	57600	Wednesday
14/07/2022	9.00	5.00	8	57600	Thursday
15/07/2022	9.00	5.00	8	57600	Friday

Date	Start	Finish	Hours	Litres @ 120/min	Day
16/07/2022			0	0	Saturday
17/07/2022			0	0	Sunday
18/07/2022	7.00	10.00	3	21600	Monday
19/07/2022			1	7200	Tuesday
20/07/2022			0	0	Wednesday
21/07/2022			0	0	Thursday
22/07/2022	9.00	10.00	1	7200	Friday
23/07/2022	9.00	1.00	4	28800	Saturday
24/07/2022			0	0	Sunday
25/07/2022	9.00	5.00	8	57600	Monday
26/07/2022	7.00	3.30	8.5	61200	Tuesday
27/07/2022	8.00	4.30	8.5	61200	Wednesday
28/07/2022	8.00	4.30	8.5	61200	Thursday
29/07/2022	8.00	4.30	8.5	61200	Friday
30/07/2022	8.00	12.00	4	28800	Saturday
31/07/2022			0	0	Sunday
1/08/2022	9.00	3.00	6	43200	Monday
2/08/2022	7.00	2.00	7	50400	Tuesday
3/08/2022	8.00	3.00	7	50400	Wednesday
4/08/2022	7.30	2.30	7	50400	Thursday
5/08/2022	7.00	2.00	7	50400	Friday
6/08/2022	7.00	11.00	4	28800	Saturday
7/08/2022			0	0	Sunday
8/08/2022	8.00	11.00	3	21600	Monday
9/08/2022	12.00	5.00	5	36000	Tuesday
10/08/2022	11.00	4.00	5	36000	Wednesday
11/08/2022	11.00	4.00	5	36000	Thursday
12/08/2022	12.00	5.00	5	36000	Friday
13/08/2022	7.00	12.00	5	36000	Saturday
14/08/2022			0	0	Sunday
15/08/2022	10.30	3.30	5	36000	Monday
16/08/2022			0	0	Tuesday
17/08/2022			0	0	Wednesday
18/08/2022	11.00	4.00	5	36000	Thursday
19/08/2022	8.30	2.30	6	43200	Friday
20/08/2022	7.00	1.00	6	43200	Saturday
21/08/2022			0	0	Sunday
22/08/2022	8.00	3.00	7	50400	Monday
23/08/2022	7.00	2.00	7	50400	Tuesday
24/08/2022	7.30	2.30	7	50400	Wednesday
25/08/2022	7.30	2.30	7	50400	Thursday
26/08/2022	8.00	3.00	7	50400	Friday
27/08/2022			0	0	Saturday
28/08/2022			0	0	Sunday
29/08/2022	11.00	5.00	6	43200	Monday
30/08/2022	10.00	4.00	6	43200	Tuesday
31/08/2022	12.00	5.00	5	36000	Wednesday
1/09/2022	8.00	2.00	6	43200	Thursday
2/09/2022	8.00	2.00	6	43200	Friday

Date	Start	Finish	Hours	Litres @ 120/min	Day
3/09/2022	9.00	1.00	4	28800	Saturday
4/09/2022			0	0	Sunday
5/09/2022	8.30	2.30	6	43200	Monday
6/09/2022			6	43200	Tuesday
7/09/2022	9.00	3.00	6	43200	Wednesday
8/09/2022	9.30	3.30	6	43200	Thursday
9/09/2022	9.30	3.30	6	43200	Friday
10/09/2022	9.00	12.00	3	21600	Saturday
11/09/2022			0	0	Sunday
12/09/2022	9.00	1.00	4	28800	Monday
13/09/2022	9.30	2.30	5	36000	Tuesday
14/09/2022	8.00	3.30	7.5	54000	Wednesday
15/09/2022	8.00	3.30	7.5	54000	Thursday
16/09/2022	8.00	3.30	7.5	54000	Friday
17/09/2022	8.30	12.30	4	28800	Saturday
18/09/2022			0	0	Sunday
19/09/2022	8.00	2.00	6	43200	Monday
20/09/2022	9.00	3.00	6	43200	Tuesday
21/09/2022	8.00	2.00	6	43200	Wednesday
22/09/2022	8.00	2.00	6	43200	Thursday
23/09/2022	10.00	3.00	5	36000	Friday
24/09/2022	8.00	12.00	4	28800	Saturday
25/09/2022			0	0	Sunday
26/09/2022	8.00	12.00	4	28800	Monday
27/09/2022	7.00	9.00	2	14400	Tuesday
28/09/2022	7.00	8.00	1	7200	Wednesday
29/09/2022	7.00	3.00	8	57600	Thursday
30/09/2022	7.00	3.00	8	57600	Friday
1/10/2022			0	0	Saturday
2/10/2022			0	0	Sunday
3/10/2022			0	0	<b>Monday</b>
4/10/2022	8.30	2.30	6	43200	Tuesday
5/10/2022	7.00	3.00	8	57600	Wednesday
6/10/2022	7.00	3.00	8	57600	Thursday
7/10/2022	8.00	4.00	6	43200	Friday
8/10/2022	7.00	12.00	5	36000	Saturday
9/10/2022			0	0	Sunday
10/10/2022			0	0	Monday
11/10/2022			0	0	Tuesday
12/10/2022			0	0	Wednesday
13/10/2022			0	0	Thursday
14/10/2022			0	0	Friday
15/10/2022			0	0	Saturday
16/10/2022			0	0	Sunday
17/10/2022			0	0	Monday
18/10/2022			0	0	Tuesday
19/10/2022			0	0	Wednesday
20/10/2022			0	0	Thursday
21/10/2022			0	0	Friday

Date	Start	Finish	Hours	Litres @ 120/min	Day
22/10/2022			0	0	Saturday
23/10/2022			0	0	Sunday
24/10/2022	7.00	5.00	9	64800	Monday
25/10/2022	7.00	5.00	9	64800	Tuesday
26/10/2022	7.00	5.00	9	64800	Wednesday
27/10/2022	7.00	5.00	9	64800	Thursday
28/10/2022	7.00	5.00	9	64800	Friday
29/10/2022	8.00	12.00	4	28800	Saturday
30/10/2022			0	0	Sunday
31/10/2022	7.00	3.30	8.5	61200	Monday
1/11/2022	7.00	3.30	8.5	61200	Tuesday
2/11/2022	7.00	3.30	8.5	61200	Wednesday
3/11/2022	7.00	3.30	8.5	61200	Thursday
4/11/2022	7.00	3.30	8.5	61200	Friday
5/11/2022	7.00	1.00	6	43200	Saturday
6/11/2022			0	0	Sunday
7/11/2022	9.00	3.00	6	43200	Monday
8/11/2022	8.00	3.00	7	50400	Tuesday
9/11/2022	7.00	2.00	7	50400	Wednesday
10/11/2022	7.30	2.30	7	50400	Thursday
11/11/2022	7.00	2.00	7	50400	Friday
12/11/2022			0	0	Saturday
13/11/2022			0	0	Sunday
14/11/2022	11.00	4.00	5	36000	Monday
15/11/2022			4	28800	Tuesday
16/11/2022	8.30	4.30	8	57600	Wednesday
17/11/2022	7.00	3.00	8	57600	Thursday
18/11/2022	7.00	3.00	8	57600	Friday
19/11/2022			0	0	Saturday
20/11/2022			0	0	Sunday
21/11/2022	8.00	3.30	7.5	54000	Monday
22/11/2022	8.30	4.00	7.5	54000	Tuesday
23/11/2022	8.30	4.00	7.5	54000	Wednesday
24/11/2022	8.30	4.00	7.5	54000	Thursday
25/11/2022	8.30	4.00	7.5	54000	Friday
26/11/2022	9.00	12.00	3	21600	Saturday
27/11/2022			0	0	Sunday
28/11/2022	8.30	2.30	6	43200	Monday
29/11/2022			4	28800	Tuesday
30/11/2022	8.00	1.30	3.5	25200	Wednesday
1/12/2022	11.00	4.30	5.5	39600	Thursday
2/12/2022	8.00	2.00	6	43200	Friday
3/12/2022	8.00	12.00	4	28800	Saturday
4/12/2022			0	0	Sunday
5/12/2022	8.00	4.00	8	57600	Monday
6/12/2022	8.00	4.30	8.5	61200	Tuesday
7/12/2022	9.00	5.00	8.5	61200	Wednesday
8/12/2022	8.00	4.30	8.5	61200	Thursday
9/12/2022	8.00	4.30	8.5	61200	Friday



Date	Start	Finish	Hours	Litres @ 120/min	Day
10/12/2022	8.00	12.00	4	28800	Saturday
11/12/2022			0	0	Sunday
12/12/2022	8.00	3.00	7	50400	Monday
13/12/2022			0	0	Tuesday
14/12/2022			0	0	Wednesday
15/12/2022	12.00	4.30	4.5	32400	Thursday
16/12/2022	12.00	4.30	4.5	32400	Friday
17/12/2022	8.00	12.30	4.5	32400	Saturday
18/12/2022			0	0	Sunday
19/12/2022	7.30	2.30	7	50400	Monday
20/12/2022	11.00	4.00	5	36000	Tuesday
21/12/2022	11.00	4.00	5	36000	Wednesday
22/12/2022	11.00	4.00	5	36000	Thursday
23/12/2022			0	0	Friday
24/12/2022			0	0	Saturday
25/12/2022			0	0	<b>Sunday</b>
26/12/2022			0	0	<b>Monday</b>
27/12/2022			0	0	<b>Tuesday</b>
28/12/2022			0	0	Wednesday
29/12/2022			0	0	Thursday
30/12/2022			0	0	Friday
31/12/2022			0	0	Saturday
	Total Megalitres Taken			11.27	
	<i>Total Megalitres Allocated</i>			<b>45</b>	

## Appendix L

# Noise Monitoring Results

# Noise Monitoring Assessment

Hodgson Quarries and Plant Pty Ltd

Prepared for: VGT Environmental Compliance Solutions  
Pty Limited  
November 2022  
MAC160257RP7V1



# Document Information

## Noise Monitoring Assessment

### Hodgson Quarries and Plant Pty Ltd

Prepared for: VGT Environmental Compliance Solutions Pty Limited

PO Box 2335

Greenhills NSW 2322

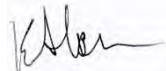

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Document ID	Date	Prepared By	Signed	Reviewed By	Signed
MAC160257RP7V1	30 November 2022	Kristian Allen		Oliver Muller	

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APPENDIX A – GLOSSARY OF TERMS

APPENDIX B – REGULATORY NOISE LIMITS

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# 1 Introduction

Muller Acoustic Consulting Pty Ltd (MAC) has been commissioned by VGT Environmental Compliance Solutions Pty Limited to complete a Noise Monitoring Assessment (NMA) for Hodgson Quarries and Plant Pty Ltd ('the quarry'). The NMA has been completed to quantify operational noise emissions and off-site truck noise as per Condition 47 and 48 of their Project Approval (Department of Planning and Environment (DPE)) and Environment Protection License (EPL) (ref:6535) from NSW Environment Protection Authority (EPA).

The assessment has been conducted in accordance with the following documents:

- NSW Environment Protection Authority (EPA), 2017, Noise Policy for Industry (NPI);
- NSW Department of Environment, Climate Change and Water (DECCW), 2011, NSW Road Noise Policy (RNP);
- Australian Standard AS 1055:2018 (AS 1055) – Acoustics – Description and Measurement of Environmental Noise;
- NSW Environment Protection Authority (EPA's), Approved methods for the measurement and analysis of environmental noise in NSW, 2022;
- NSW Environment Protection Authority (EPA), 2015, Environment Protection Licence EPL 6535 (EPL); and
- Development Consent (DA No.267-11-99, Mod 4), Department of Planning and Environment (DPE), Modified August 2021.

A glossary of terms, definitions and abbreviations used in this report is provided in **Appendix A**.

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## 2 Noise Criteria

### 2.1 Operational Noise Criteria

The project has operational noise criteria prescribed by both the DPE and EPA (see **Appendix B**). Notwithstanding, for consistency with the Acoustic Assessment prepared for Modification 4 (August 2021) of the quarry, this assessment has adopted criteria as per the Development Application summarised below:

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

**Table 1 Operational Noise Criteria**

Receiver	Day	Morning Shoulder	Morning Shoulder
	7am-6pm	6am-7am	6am-7am
	Monday to Saturday	Monday to Saturday	Monday to Saturday
	LAeq(15min)	LAeq(15min)	LA1(1min)
B	44	40	50
All Other Receivers	43	40	50

### 2.2 Road Noise Criteria

Condition 48 of the DA specifies noise criteria for off-site road trucks from the quarry. These criteria are consistent with those outlined in the RNP (DECCW, 2011) for local roads.

*Condition 48.*

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

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### 3 Methodology

Attended noise surveys for this assessment were conducted in general accordance with the procedures described in Australian Standard AS 1055:2018, "Acoustics - Description and Measurement of Environmental Noise" and the EPL.

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  $\pm 0.5$  dBA.

#### 3.1 Operational Noise Measurement Methodology

The locality surrounding the quarry is primarily rural/residential. Three representative receivers were selected for this assessment being Location A (north east), Location B (south east) and Location C (north west) (see Figure 1). The measurements were carried out using a Svantek Type 1, 971 noise analyser on Friday 4 November 2022.

The monitoring consisted of six 15-minute monitoring intervals between 6am to 8am. Where possible throughout each survey the operator quantified the contribution of any significant noise sources. Quarry loading and transportation operations commence at 6am, it is noted that processing was not operational during the monitoring period. The programme of the measurements and list of quarry activities is presented in Table 2.

Table 2 Noise Monitoring Programme			
Number of 15 minute Measurements	Measurement Period	Assessment Period	Quarry Activities
3	6am to 7am	Night/Morning Shoulder	Toolbox Talks, Loading/Transportation, No Processing
3	7am to 8am	Day	Loading/Transportation, No Processing

### 3.2 Road Noise Assessment Methodology

Road noise monitoring was conducted at 4405 Old Northern Road, Maroota NSW using a Type 1 Svantek, 977 noise analyser on Friday 4 November 2022. The monitoring was conducted between 6am to 8am as per Condition 48 of the DA, with the monitoring position situated at a 15m offset from Old Northern Road.

This location was selected as it had a clear line of site to Old Northern Road and could also be used to visually identify project related trucks entering and leaving site via Roberts Road. Noise levels obtained at the monitoring location are considered representative for receivers situated 15m from the road alignment, which is considered a representative worst case.

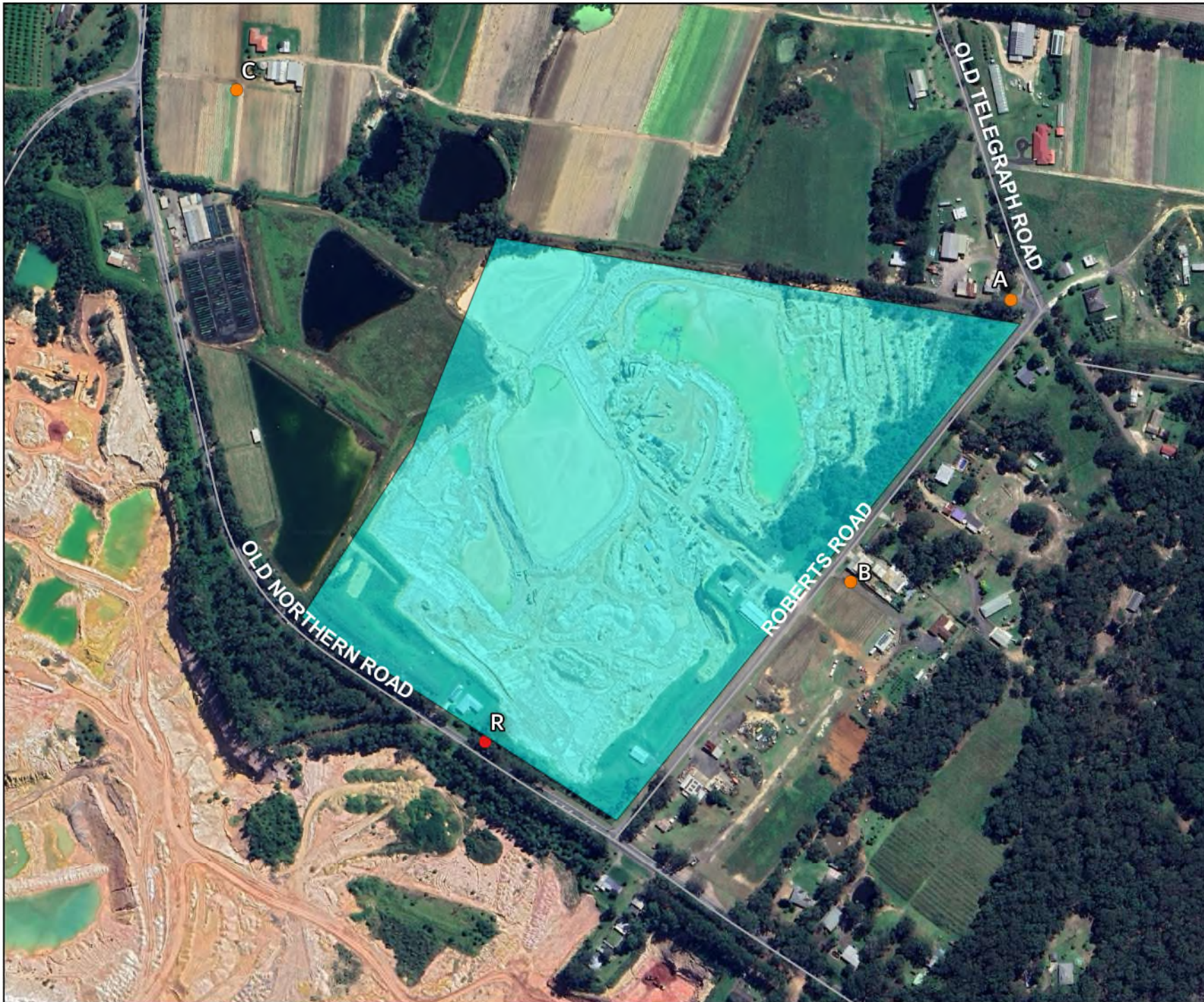



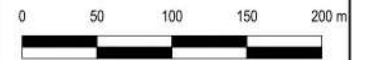


FIGURE 1  
Site Locality  
MAC160257

**KEY**

-  Attended Monitoring Locations
-  Road Noise Monitoring Location
-  Site Boundary



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## 4 Results

### 4.1 Operational Noise Results – Location A

The monitoring and assessment results are presented in individual tables for each monitoring location. The results of the 15-minute attended noise measurements for Friday 4 November 2022 for Location A are summarised in **Table 3**.

Table 3 Operational Noise Results – Location A						
Time (hrs)	Primary Noise Descriptor (dBA re 20 µPa)				Meteorology	Description and SPL, dBA
	L <sub>Amax</sub>	L <sub>A10</sub>	L <sub>Aeq</sub>	L <sub>A90</sub>		
06:00 (Morning Shoulder)	67	42	44	36	WS: <0.5m/s WD: W Rain: Nil	Traffic 30-67 Birds 30-55 Quarry - Mobile Plant 30-35 Quarry - Vehicle Movements 30-38
Quarry Site L <sub>Aeq</sub> (15min) Contribution						<35
Criteria L <sub>Aeq</sub> (15min)						40
Quarry Site L <sub>Aeq</sub> (15min) Contribution						<45
Criteria L <sub>A1</sub> (1min)						50
07:02 (Day)	83	50	57	35	WS: <0.5m/s WD: SW Rain: Nil	Traffic 30-83 Birds 30-57 Residential Noise 30-54 Quarry - Mobile Plant 30-35 Quarry - Vehicle Movements 30-38
Quarry Site L <sub>Aeq</sub> (15min) Contribution						<35
Criteria L <sub>Aeq</sub> (15min)						43

## 4.2 Operational Noise Results – Location B

The results of the 15-minute attended noise measurements for Friday 4 November 2022 for Location B are summarised in Table 4.

Table 4 Operator-Attended Noise Survey Results – Location B						
Time (hrs)	Primary Noise Descriptor (dBA re 20 µPa)				Meteorology	Description and SPL, dBA
	L <sub>Amax</sub>	L <sub>A10</sub>	L <sub>Aeq</sub>	L <sub>A90</sub>		
06:17 (Morning Shoulder)					WS: <0.5m/s	Traffic 30-71 Birds 30-63
	71	55	50	37	WD: SW	Truck Idle (offsite) 47-49
					Rain: Nil	Quarry - Mobile Plant 30-40
						Quarry - Vehicle Movements 30-46
						Quarry Site L <sub>Aeq</sub> (15min) Contribution 37
						Criteria L <sub>Aeq</sub> (15min) 40
						Quarry Site L <sub>Aeq</sub> (15min) Contribution 46
					Criteria L <sub>A1</sub> (1min) 50	
07:20 (Day)					WS: <0.5m/s	Traffic 30-78 Birds 30-59
	78	49	51	34	WD: SW	Dogs Barking 35-46
					Rain: Nil	Quarry - Mobile Plant 30-35
						Quarry - Vehicle Movements 30-35
						Quarry Site L <sub>Aeq</sub> (15min) Contribution <35
						Criteria L <sub>Aeq</sub> (15min) 44



### 4.3 Operational Noise Results - Location C

The results of the 15-minute attended noise measurements for Friday 4 November 2022 for Location C are summarised in Table 5.

Table 5 Operator-Attended Noise Survey Results – Location C						
Time (hrs)	Primary Noise Descriptor (dBA re 20 µPa)				Meteorology	Description and SPL, dBA
	L <sub>Amax</sub>	L <sub>A10</sub>	L <sub>Aeq</sub>	L <sub>A90</sub>		
06:37					WS: <0.5m/s	Traffic 30-69
(Morning	69	50	47	35	WD: SW	Birds 30-56
Shoulder)					Rain: Nil	Quarry Inaudible
Quarry Site L <sub>Aeq</sub> (15min) Contribution						<30
Criteria L <sub>Aeq</sub> (15min)						40
Quarry Site L <sub>Aeq</sub> (15min) Contribution						<40
Criteria L <sub>A1</sub> (1min)						50
07:41					WS: <0.5m/s	Traffic 30-67
(Day)	67	47	45	37	WD: SW	Birds 30-61
					Rain: Nil	Commercial Noise 34-43
						Quarry Inaudible
Quarry Site L <sub>Aeq</sub> (15min) Contribution						<30
Criteria L <sub>Aeq</sub> (15min)						43

#### 4.4 Road Noise Results

The results of the road noise attended measurements for Friday 4 November 2022 are summarised in **Table 6**.

Noise monitoring identified that overall LAeq(1hr) noise levels were dominated by vehicles not associated with the quarry. Therefore, road traffic noise calculations were undertaken to quantify project road noise contributions at the measurement position. The calculations were completed using United States (US) Federal Highway Administration (FHWA) calculation method (Report 550/9-74-004) Appendix A-13 and CORTN amendments. This method is an internationally accepted theoretical traffic noise prediction calculation, ideal for calculation of road traffic noise where relatively small traffic flows are encountered. The FHWA Traffic Noise Model (TNM) is listed in the RNP as an appropriate calculation method. Results of the traffic noise calculations identify that quarry vehicles satisfy the relevant day and night (morning shoulder) road noise criteria.

<b>Table 6 Road Noise Survey Results</b>				
Period	Number of Quarry Trucks (passbys)	Overall Measured	Calculated LAeq(1hr)	Criteria
		LAeq(1hr) (dBA re 20 µPa)	Project Truck Contribution	dBA
		dBA	dBA	LAeq(1hr)
6am to 7am	10	69	50	50
7am to 8am	2	65	44	55

## 5 Discussion

### 5.1 Operational Noise Discussion

#### 5.1.1 Discussion of Results – Location A

Attended measurement results for monitoring conducted at Location A on Friday 4 November 2022 identified that quarry noise was audible during morning shoulder measurements and day measurements, with non-quarry sources dominating measured noise levels. Generally, quarry noise sources included loader movements, reverse alarms and road truck movements and non-quarry noise sources included local and distant traffic and birds.

Therefore, estimated quarry noise contributions were below the relevant EPL noise limit for all measurements at Location A.

#### 5.1.2 Discussion of Results – Location B

Attended measurement results for monitoring conducted at Location B on Friday 4 November 2022 identified that quarry noise was audible during morning shoulder measurements and day measurements. Generally, quarry noise sources included loader movements, reverse alarms and road truck movements and non-quarry noise sources included local and distant traffic, birds, dogs barking and heavy vehicles idling offsite.

Therefore, estimated quarry noise contributions were below the relevant EPL noise limit for all measurements at Location B.

#### 5.1.3 Discussion of Results – Location C

Attended measurement results for monitoring conducted at Location C on Friday 4 November 2022 identified that quarry noise was inaudible during morning shoulder and day measurements, with non-quarry sources dominating measured noise levels. Generally, non-quarry noise sources included traffic, birds, and nearby commercial noise.

Therefore, estimated quarry noise contributions were below the relevant EPL noise limit for all measurements at Location C.

#### 5.1.4 Road Noise Discussion

Road noise emission from quarry vehicles, satisfied relevant noise criteria as specified by Condition 48 of the DA for receivers situated at a 15m offset to the roadway. Furthermore, ambient road traffic not associated with the project dominated measured noise levels throughout measurements.

## 6 Conclusion

Muller Acoustic Consulting Pty Ltd (MAC) has completed a Noise Monitoring Assessment on behalf of Hodgson Quarries and Plant Pty Ltd. The assessment was completed to quantify site noise emissions against relevant noise criteria pertaining to quarry operations and off-site truck movements.

Attended monitoring has identified that operational and road noise emissions generated by the quarry comply with relevant statutory noise limits. Furthermore, project related noise emissions are generally masked by extraneous non-quarry sources.

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# 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 <sub>ax</sub>	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 <sub>w</sub> 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 <sub>p</sub> or SPL)	the level of sound pressure; as measured at a distance by a standard sound level meter. This differs from L <sub>w</sub> in that it is the sound level at a receiver position as opposed to the sound 'intensity' of the source.

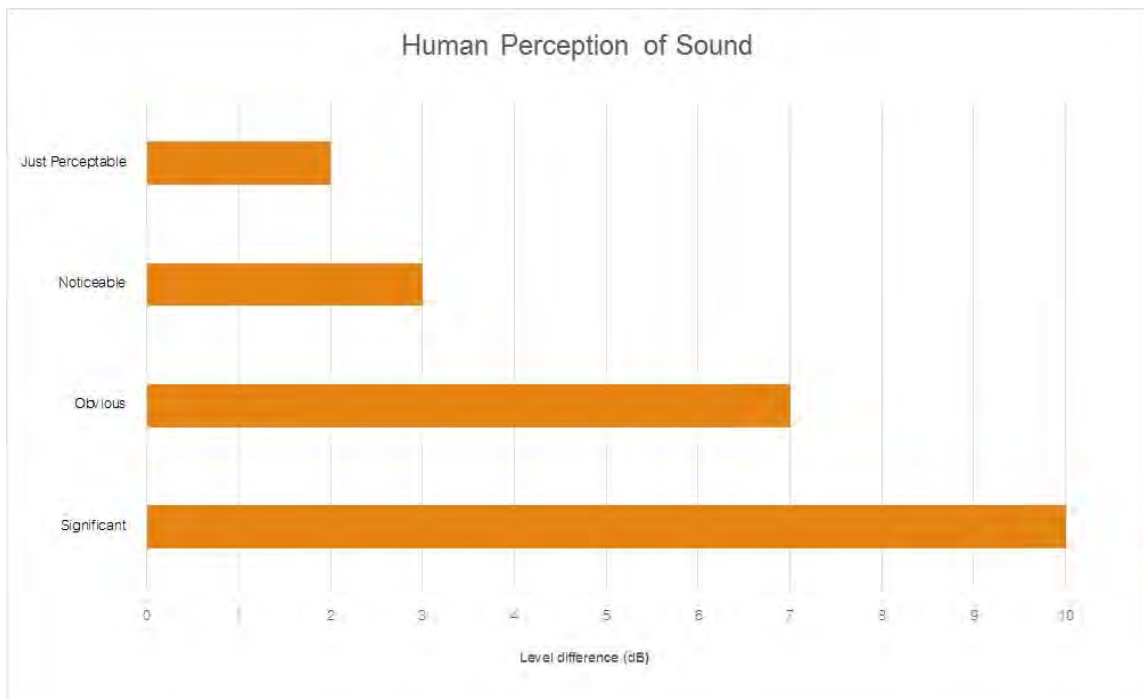


Table A2 provides a list of common noise sources and their typical sound level.

**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**



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# Appendix B – Regulatory Noise Limits

# Environment Protection Licence



Licence - 6535

## Licence Details

Number:	6535
Anniversary Date:	12-March

## Licensee

HB MAROOKA PTY LTD

PO BOX 1778

GOSFORD NSW 2250

## Premises

HB MAROOKA PTY LTD

CNR ROBERTS &amp; OLD NORTHERN ROADS

MAROOKA NSW 2756

## Scheduled Activity

Crushing, Grinding or Separating

Extractive Activities

## Fee Based Activity

	<u>Scale</u>
Crushing, grinding or separating	> 100000-500000 T processed
Land-based extractive activity	> 100000-500000 T extracted, processed or stored

## Region

Metropolitan - Sydney Industry

Level 13, 10 Valentine Ave

PARRAMATTA NSW 2150

Phone: (02) 9995 5000

Fax: (02) 9995 6900

PO Box 668 PARRAMATTA

NSW 2124

# Environment Protection Licence



Licence - 6535

## **P1 Location of monitoring/discharge points and areas**

P1.1 The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.

## **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 Noise limits**

L2.1 Noise from the premises must not exceed the sound pressure level expressed as LA10 (15 minute) of 45 dB(A), except as expressly provided by this licence.

L2.2 Noise from the premises is to be measured or computed at any point within one metre of any residential boundary, or at any point within 30 metres of the dwelling where the dwelling is more than 30 metres from the boundary, to determine compliance with the noise level limits in Condition L2.1.

## **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.



44. The results of the Groundwater Monitoring Program shall be reported the Department and DPI-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*

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).

## **NOISE**

### *Noise Management Plan*

46. 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.

47. For typical operations, noise from the premises must not exceed:
- an  $L_{Aeq,15 \text{ min}}$  noise emission criterion of 43 dB(A) (7am to 6pm) Monday to Saturday;
  - an  $L_{Aeq,15 \text{ min}}$  noise emission criterion of 40 dB(A) (6am to 7am) Monday to Saturday; and
  - an  $L_{A1,1 \text{ minute}}$  noise emission criterion of 50 dB(A) (6am to 7am) Monday to Saturday.

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*

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.*

49. 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*

50. The Applicant shall ensure that truck movements associated with the development do not exceed 100 movements per day (50 laden truck movements) or 20 (10 laden truck movements) movements per hour, during construction or operation.



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## Appendix M

# Flora Monitoring Results

**ANNUAL  
BIODIVERSITY  
MONITORING  
REPORT  
2022**

**Prepared for Hodgson Quarries and Plant Pty Ltd**

**October 2022 V.1**



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# **Annual Biodiversity Monitoring Report 2022**

**Hodgson Quarries and Plant Pty Ltd  
Roberts Road Maroota NSW**

This assessment has been prepared by

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South East Environmental

October 2022 V.1

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## Abbreviations

<b>Abbreviation</b>	<b>Description</b>
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 stratum. 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 October 2022. 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 spring. 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 October 2022 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 Oct 2022

### 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 Oct 2022

## 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 24 month 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. Almost 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. Several Eastern Snake-necked Tortoise's *Chelodina longicollis* were observed foraging within the large dam while a Red-bellied Black Snake *Pseudechis porphyriacus* was commonly observed sunbaking along the edge of the same dam during the reporting period.



**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 two years. There are two WoNS species present along the fence line of the neighboring property, Lantana *Lantana camara* and Blackberry *Rubus fruticosus sp. aggregate* which have been under a monthly management program for the past twelve months. Significant death of both species has been noted therefore a reduction of intensity for the management schedule is justified. Quarterly to bi-annual treatment and monitoring should be sufficient.



**Figure 8.** Effective treatment of Lantana on the northern bund wall



**Figure 9.** Planted native vegetation along northern property boundary

### 3.4 THREATENED FLORA

A single threatened flora species was previously identified within the property boundary. During the site survey in October 2022 seven *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 - 400mm in diameter. Six plants had multi-stems which were all healthy and had ample foliage and seed pod indicating the plants had reached reproductive maturity. The seventh plant was a small single stemmed seedling. Three of these plants appeared to be new recruits while four were plants identified in 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 two monitoring periods. This new recruit is likely to have appeared from soil seedbank.

NSW OES 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 10.** *Acacia bynoeana* identified and located onsite with plentiful seed pod both fresh and spent



**Figure 11.** Typical habitat where *Acacia bynoeana* has been identified and located onsite

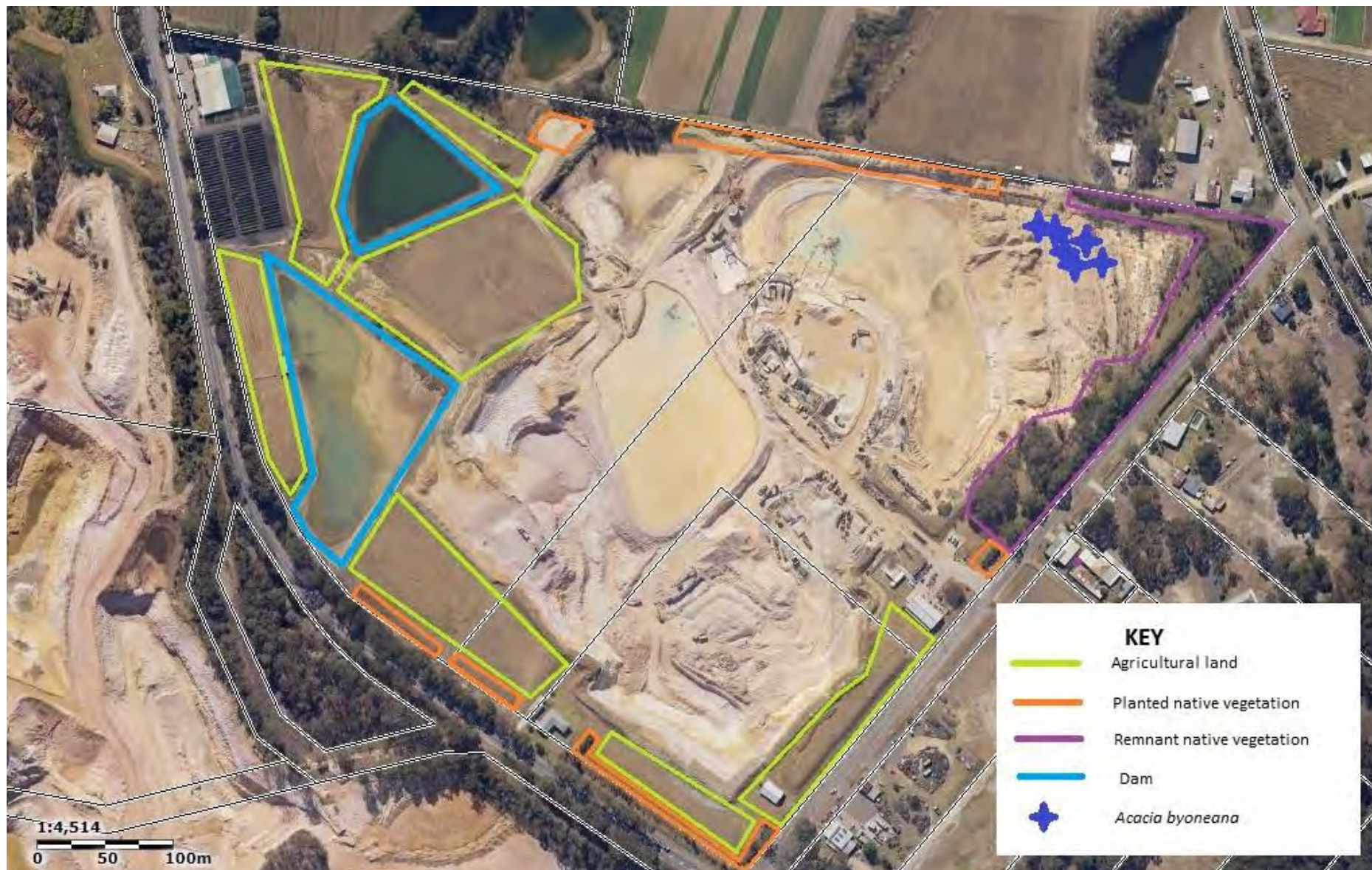


Figure 12. Location of vegetation zones within the Hodgson Quarries Roberts Road site

### 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 October 2022, 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 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

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This is the fifth 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.

The site does appear to have shown some tolerance to the extreme wet conditions that the two year cycle of La Nina has brought to the region. Evidence of some die back, particularly of large shrubs is apparent although juvenile growth is reasonably prolific. Forbs and ferns have thrived in the wet conditions and have increased in diversity and density since the previous reporting period. Native grasses have continued to increase in density. Particularly in bare patches where soils are too shallow for shrubs and canopy species to become established.

Natural native regeneration from the soil seed bank is occurring throughout much of the remnant native vegetation areas. Fencing to exclude 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 DPIE 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

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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

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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 2023. 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 2023. 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 14 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.

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## 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	

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<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 teucrioides</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 sp. agg.</i>	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
<b>Bird</b>		
<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>Platyercus eximius</i>	Eastern Rosella	Observed (nesting in fencepost)
<i>Sericornis frontalis</i>	White-browed scrubwren	Observed
<b>Mammal</b>		
* <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
<b>Reptile</b>		
<i>Chelodina longicollis</i>	Snake-necked Turtle	Observed
<i>Intelligama lesueurii</i>	Water Dragon	Observed
<i>Lampropholis guichenoti</i>	Common Skink	Observed
<i>Pseudechis porphyriacus</i>	Red-bellied Black Snake	Observed
<b>Amphibian</b>		
<i>Crinia signifera</i>	Common Eastern Toadlet	Heard call
<i>Litoria peronii</i>	Peron's Tree Frog	Observed

\*Pest species

## Hodgson Quarries Maroota - Biodiversity Monitoring Report 2022

### 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
<b>African Lovegrass</b>	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide				Herbicide	Herbicide	Herbicide	Herbicide
<b>Blackberry</b>	Herbicide	Herbicide	Herbicide						Herbicide	Herbicide	Herbicide	Herbicide
<b>Bridal Creeper</b>	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal
<b>Cobblers Pegs</b>	Hand removal	Hand removal	Hand removal	Hand removal					Herbicide	Herbicide	Herbicide	Hand removal
<b>Crofton Weed</b>	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide				Herbicide	Herbicide	Herbicide	Herbicide
<b>Fireweed</b>	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal	Hand removal
<b>Lantana</b>	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide				Herbicide	Herbicide	Herbicide	Herbicide
<b>Paspalum</b>	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide			Herbicide	Herbicide	Herbicide	Herbicide
<b>Rhodes Grass</b>	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide
<b>Whiskey Grass</b>	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.



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## Appendix N


# Weed Management Reports

**Plan of:** Weed Management January 2022 - Maroota Sand Quarry  
**Figure:** FIVE  
**Version/Date:** V0 19/02/2022  
**Our Ref:** 11340\_HMA\_WeedSurvey\_Q05\_V1\_F5\_Jan2022

**Location:** Maroota Quarry, Roberts Road, Maroota, NSW  
**Council:** Hills Shire Council  
**Tenure:** Not Applicable  
**Client:** Hodgson Quarries & Plant Pty Ltd

**Source:** nearmap - Image Date 22/04/2021 Zone MGA 56  
**Survey:** Lot Boundary NSW Clip & Ship  
**Projection:** GDA2020/MGA Zone 56 EPSG:7856  
**Contour Interval:** Not Applicable

**Plan By:** SK/JD  
**Project Manager:** LT

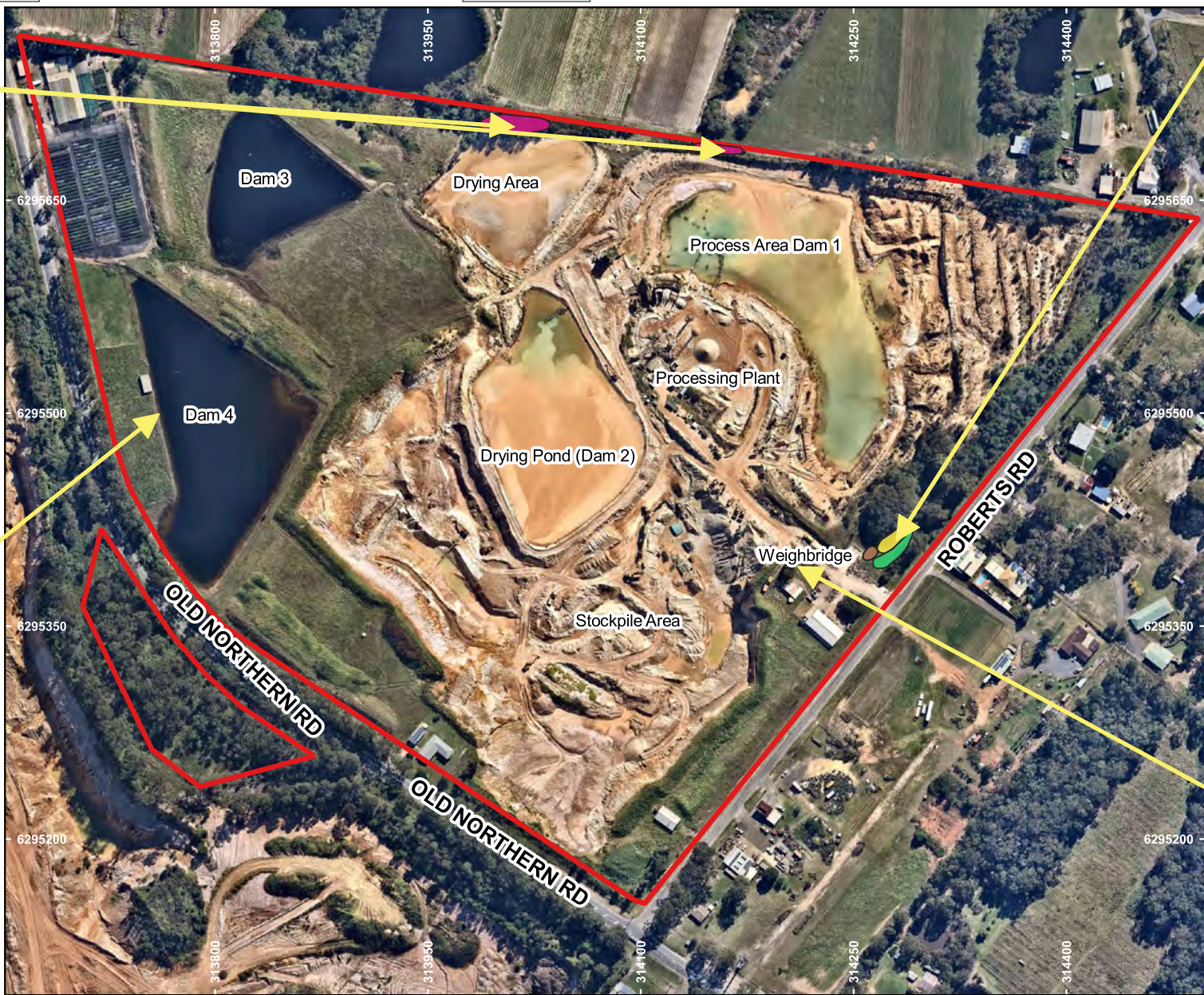


This figure may be based on third party data which has not been verified by vgt and may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and vgt does not warrant its accuracy.



**Weed Name:** Lantana  
**Treatment Date:** 31st January 2022 and week prior  
**Herbicide:** SureFire Metsulfuron Methyl

**Weed Name:** Crofton Weed, Paspalum and Rhodes Grass  
**Treatment Date:** 31st January 2022  
**Removal Method:** Slashing  
**Photography:**



**Weed Name:** Blackberry  
**Treatment Date:** 31st January 2022 and week prior  
**Herbicide:** SureFire Metsulfuron Methyl

**Weed Name:** Fireweed, Whiskey Grass and Cobblers Peg  
**Treatment Date:** 31st January 2022  
**Removal method:** Hand pulled and slashing



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>African Lovegrass</b>	Herbicide 31/1/22	Herbicide	Slashing	Slashing	Slashing				Herbicide	Herbicide	Herbicide	Herbicide
<b>Blackberry</b>	Herbicide 31/1/22	Herbicide	Herbicide						Herbicide	Herbicide	Herbicide	Herbicide
<b>Cobblers Peg</b>	Hand Removal 31/1/22	Hand Removal	Hand Removal	Hand Removal					Herbicide	Herbicide	Herbicide	Hand Removal
<b>Crofton Weed</b>	Slashing 31/1/22	Herbicide	Herbicide	Herbicide	Herbicide				Slashing	Slashing	Slashing	Slashing
<b>Fireweed</b>	Hand Removal 31/1/22	Hand Removal	Hand Removal	Slashing	Slashing	Slashing	Slashing	Slashing	Slashing	Hand Removal	Hand Removal	Hand Removal
<b>Lantana</b>	Herbicide 31/1/22	Herbicide	Herbicide	Herbicide	Herbicide				Herbicide	Herbicide	Herbicide	Herbicide
<b>Paspalum</b>	Slashing 31/1/22	Slashing	Slashing	Herbicide	Herbicide	Herbicide			Slashing	Slashing	Slashing	Slashing
<b>Rhodes Grass</b>	Slashing 31/1/22	Slashing	Slashing	Slashing	Slashing	Slashing	Slashing	Slashing	Slashing	Slashing	Slashing	Slashing
<b>Whiskey Grass</b>	Hand Removal 31/1/22	Hand Removal	Hand Removal	Hand Removal	Hand Removal	Hand Removal	Hand Removal	Hand Removal	Herbicide	Herbicide	Herbicide	Hand Removal

**Legend**

- Property Boundary
- Lot
- 2021 December Handpulled Areas

**Treatment Areas**

**2022 - January Treatment Areas**

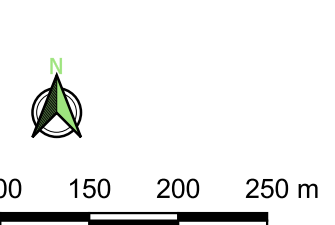
- Blackberry
- Crofton Weed and Whiskey Grass
- Lantana

**Plan of:** Weed Management February 2022 - Maroota Sand Quarry  
**Figure:** SIX  
**Version/Date:** V0 24/03/2022  
**Our Ref:** 11340\_HMA\_WeedSurvey\_Q06\_V0\_F6\_Feb2022

**Location:** Maroota Quarry, Roberts Road, Maroota, NSW  
**Council:** Hills Shire Council  
**Tenure:** Not Applicable  
**Client:** Hodgson Quarries & Plant Pty Ltd

**Source:** nearmap - Image Date 22/04/2021 Zone MGA 56  
**Survey:** Lot Boundary NSW Clip & Ship  
**Projection:** GDA2020/MGA Zone 56 EPSG:7856  
**Contour Interval:** Not Applicable

**Plan By:** SK/JD  
**Project Manager:** LT

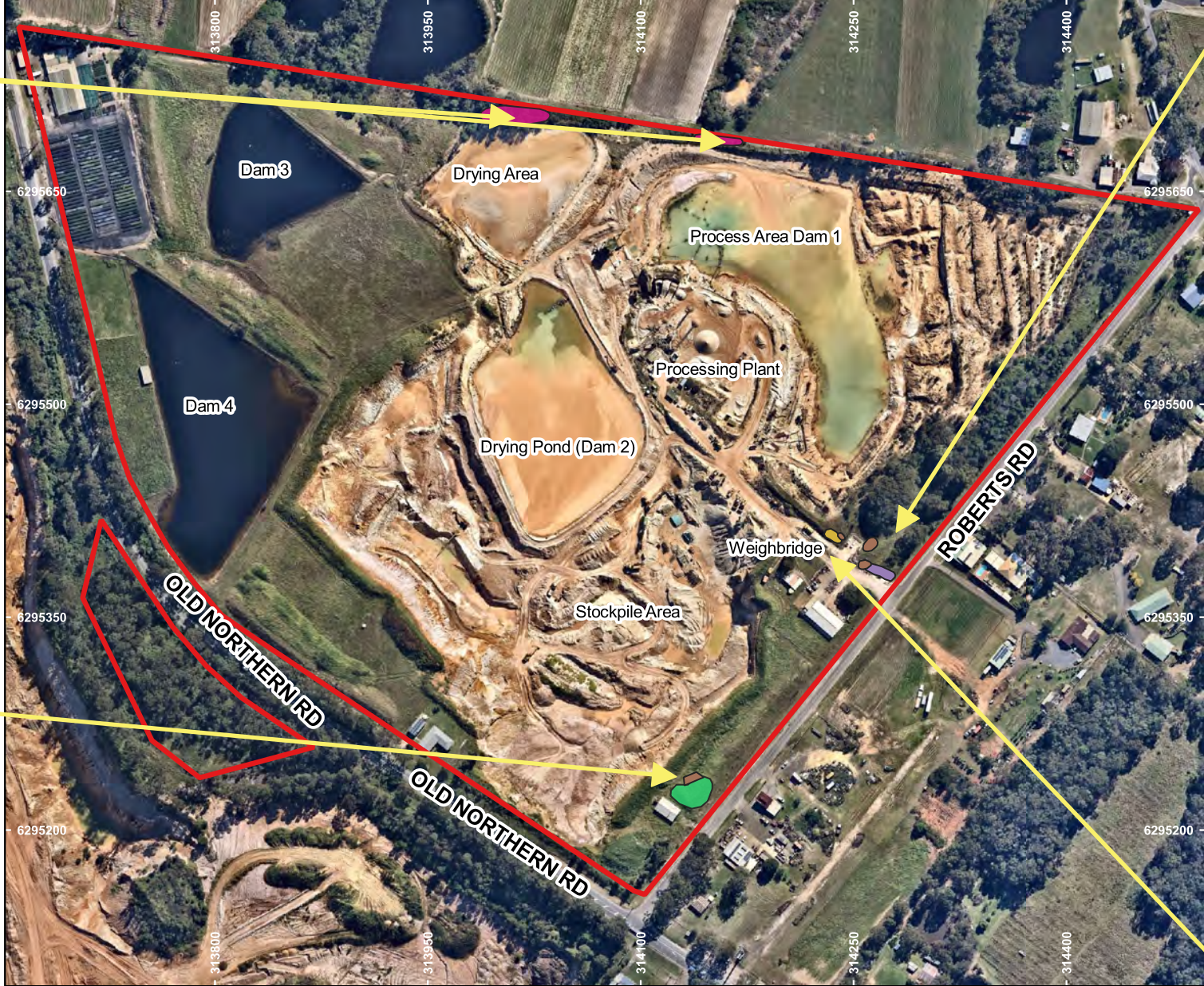


**vgt** environmental compliance solutions and laboratories  
 This figure may be based on third party data which has not been verified by vgt and may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and vgt does not warrant its accuracy.

**Northern Bundwall**  
 Weed Name: Lantana & Blackberry (Eradicated)  
 Treatment Date: 9 - 10 February 2022  
 Treatment: SureFire Metsulfuron Methyl



**Roberts Road South**  
 Weed Name: Crofton Weed, Cobblers Peg & Rhodes Grass  
 Treatment Date: 9 - 10 February 2022  
 Treatment: SureFire Metsulfuron Methyl & Hand Removal



**Site Entrance**  
 Weed Name: Paspalum & Fireweed  
 Treatment Date: 9 - 10 February 2022  
 Treatment: SureFire Metsulfuron Methyl & Hand Removal



**Weighbridge Area**  
 Weed Name: Blackberry & Whiskey Grass  
 Treatment Date: 9 - 10 February 2022  
 Treatment: SureFire Metsulfuron Methyl & Hand Removal



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>African Lovegrass</b>	Herbicide 31/1/22	Herbicide 9-10/2/22	Herbicide	Herbicide	Herbicide				Herbicide	Herbicide	Herbicide	Herbicide
<b>Blackberry</b>	Herbicide 31/1/22	Herbicide 9-10/2/22	Herbicide						Herbicide	Herbicide	Herbicide	Herbicide
<b>Cobblers Peg</b>	Hand Removal 31/1/22	Hand Removal 9-10/2/22	Hand Removal	Hand Removal					Herbicide	Herbicide	Herbicide	Hand Removal
<b>Crofton Weed</b>	Slashing 31/1/22	Herbicide 9-10/2/22	Herbicide	Herbicide	Herbicide				Herbicide	Herbicide	Herbicide	Herbicide
<b>Fireweed</b>	Hand Removal 31/1/22	Hand Removal 9-10/2/22	Hand Removal	Hand Removal	Hand Removal	Hand Removal	Hand Removal	Hand Removal	Hand Removal	Hand Removal	Hand Removal	Hand Removal
<b>Lantana</b>	Herbicide 31/1/22	Herbicide 9-10/2/22	Herbicide	Herbicide	Herbicide				Herbicide	Herbicide	Herbicide	Herbicide
<b>Paspalum</b>	Slashing 31/1/22	Herbicide 9-10/2/22	Herbicide	Herbicide	Herbicide	Herbicide			Herbicide	Herbicide	Herbicide	Herbicide
<b>Rhodes Grass</b>	Slashing 31/1/22	Herbicide 9-10/2/22	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide
<b>Whiskey Grass</b>	Hand Removal 31/1/22	Hand Removal 9-10/2/22	Hand Removal	Hand Removal	Hand Removal	Hand Removal	Hand Removal	Hand Removal	Herbicide	Herbicide	Herbicide	Hand Removal

**Legend**  
 Property Boundary  
 Lot  
 2022 February Handpulled Areas


**Treatment Areas**  
**2022 - February Treatment Areas**  
 Blackberry & Whiskey Grass  
 Crofton Weed, Cobblers Peg & Rhodes Grass  
 Lantana & Blackberry  
 Paspalum & Fireweed

**Plan of:** Weed Management April 2022 - Maroota Sand Quarry  
**Figure:** N/A  
**Version/Date:** V0 24/04/2022  
**Our Ref:** 12498\_HMA\_AR2022\_Q006\_V0\_WeedsApr22

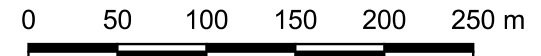
**Location:** Maroota Quarry, Roberts Road, Maroota, NSW  
**Council:** Hills Shire Council  
**Tenure:** Not Applicable  
**Client:** Hodgson Quarries & Plant Pty Ltd

**Source:** Fyfe - 24/02/2022  
**Survey:** Lot Boundary NSW Clip & Ship  
**Projection:** GDA2020/MGA Zone 56 EPSG:7856  
**Contour Interval:** Not Applicable

**Plan By:** SK/JD  
**Project Manager:** LT



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**South-West Portion**  
 Weed Name: Cobblers Peg, Fireweed, Whiskey Grass  
 Treatment Date: 14/4/2022  
 Treatment: Slashing



**South-East Portion**  
 Weed Name: Cobblers Peg, Fireweed, Whiskey Grass  
 Treatment Date: 14/4/2022  
 Treatment: Slashing



**Legend**

- Property Boundary
- Weeds 2022-April**
- Cobblers Peg
- Fireweed
- Whiskey Grass

Reference: Appendix D: Biodiversity Report 2021


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>African Lovegrass</b>	Herbicide 31/1/22	Herbicide 9-10/2/22	Herbicide	Herbicide too wet	Herbicide				Herbicide	Herbicide	Herbicide	Herbicide
<b>Blackberry</b>	Herbicide 31/1/22	Herbicide 9-10/2/22	No visible plants on site						Herbicide	Herbicide	Herbicide	Herbicide
<b>Cobblers Peg</b>	Hand Removal - 31/1/22	Hand Removal - 9-10/2/22	Hand Removal	Slashing - 14/4/22					Herbicide	Herbicide	Herbicide	Hand Removal
<b>Crofton Weed</b>	Slashing - 31/1/22	Herbicide 9-10/2/22	Herbicide	Herbicide too wet	Herbicide				Herbicide	Herbicide	Herbicide	Herbicide
<b>Fireweed</b>	Hand Removal - 31/1/22	Hand Removal - 9-10/2/22	Hand Removal	Slashing - 14/4/22	Hand Removal	Hand Removal	Hand Removal	Hand Removal 15/8/22	Hand Removal	Hand Removal	Hand Removal	Hand Removal
<b>Lantana</b>	Herbicide 31/1/22	Herbicide 9-10/2/22	No visible plants on site	No visible plants on site	No visible plants on site				Herbicide	Herbicide	Herbicide	Herbicide
<b>Paspalum</b>	Slashing - 31/1/22	Herbicide 9-10/2/22	Herbicide	Herbicide too wet	Herbicide	Herbicide			Herbicide	Herbicide	Herbicide	Herbicide
<b>Rhodes Grass</b>	Slashing - 31/1/22	Herbicide 9-10/2/22	Herbicide	Herbicide too wet	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide
<b>Whiskey Grass</b>	Hand Removal - 31/1/22	Hand Removal - 9-10/2/22	Hand Removal	Slashing - 14/4/22	Hand Removal	Hand Removal	Hand Removal	Hand Removal 15/8/22	Herbicide	Herbicide	Herbicide	Hand Removal

**Plan of:** Weed Management August 2022 - Maroota Sand Quarry  
**Figure:** N/A  
**Version/Date:** V0 30/08/2022  
**Our Ref:** 12498\_HMA\_AR2022\_Q007\_V0\_WeedsAug22

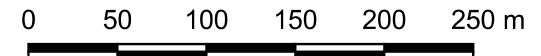
**Location:** Maroota Quarry, Roberts Road, Maroota, NSW  
**Council:** Hills Shire Council  
**Tenure:** Not Applicable  
**Client:** Hodgson Quarries & Plant Pty Ltd

**Source:** Nearmap 23/06/2022  
**Survey:** Lot Boundary NSW Clip & Ship  
**Projection:** GDA2020/MGA Zone 56 EPSG:7856  
**Contour Interval:** Not Applicable

**Plan By:** SK/JD  
**Project Manager:** LT



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**South-Eastern Boundary**  
**Weed Name:** Fireweed, Whiskey Grass  
**Treatment Date:** 15/8/2022  
**Treatment:** Hand Pulling



**Legend**

- Property Boundary
- Weeds 2022-August
- Cobblers Peg
- Fireweed
- Whiskey Grass

Reference: Appendix D: Biodiversity Report 2021

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>African Lovegrass</b>	Herbicide 31/1/22	Herbicide 9-10/2/22	Herbicide	Herbicide too wet	Herbicide				Herbicide	Herbicide	Herbicide	Herbicide
<b>Blackberry</b>	Herbicide 31/1/22	Herbicide 9-10/2/22	No visible plants on site						Herbicide	Herbicide	Herbicide	Herbicide
<b>Cobblers Peg</b>	Hand Removal - 31/1/22	Hand Removal 9-10/2/22	Hand Removal	Slashing - 14/4/22					Herbicide	Herbicide	Herbicide	Hand Removal
<b>Crofton Weed</b>	Slashing 31/1/22	Herbicide 9-10/2/22	Herbicide	Herbicide too wet	Herbicide				Herbicide	Herbicide	Herbicide	Herbicide
<b>Fireweed</b>	Hand Removal - 31/1/22	Hand Removal 9-10/2/22	Hand Removal	Slashing - 14/4/22	Hand Removal	Hand Removal	Hand Removal	Hand Removal 15/8/22	Hand Removal	Hand Removal	Hand Removal	Hand Removal
<b>Lantana</b>	Herbicide 31/1/22	Herbicide 9-10/2/22	No visible plants on site	No visible plants on site	No visible plants on site				Herbicide	Herbicide	Herbicide	Herbicide
<b>Paspalum</b>	Slashing 31/1/22	Herbicide 9-10/2/22	Herbicide	Herbicide too wet	Herbicide	Herbicide			Herbicide	Herbicide	Herbicide	Herbicide
<b>Rhodes Grass</b>	Slashing 31/1/22	Herbicide 9-10/2/22	Herbicide	Herbicide too wet	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide	Herbicide
<b>Whiskey Grass</b>	Hand Removal - 31/1/22	Hand Removal 9-10/2/22	Hand Removal	Slashing - 14/4/22	Hand Removal	Hand Removal	Hand Removal	Hand Removal 15/8/22	Herbicide	Herbicide	Herbicide	Hand Removal

## Appendix O

## Induction Checklist

# Hodgson Quarries & Plant Pty Ltd

## Employee Induction Check List

- |                                     |     |    |
|-------------------------------------|-----|----|
| • Employee Induction Completed.     | Yes | No |
| • Employee personal details issued. | Yes | No |
| • Tax File paper work issued.       | Yes | No |
| • Pre-Start check list explained.   | Yes | No |
| • Shown around quarry.              | Yes | No |
| • Shown amenities.                  | Yes | No |
| • Morning & lunch explained.        | Yes | No |
| • Time sheet book                   | Yes | No |

Additional Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Employee: \_\_\_\_\_ Management: \_\_\_\_\_

Date: \_\_\_\_\_

# **Hodgson Quarries & Plant Pty Ltd**

## **S.M.S Index**

1. Work Health & Safety Policies
2. Responsibilities and Accountabilities
3. Emergency Response Procedure
4. Consultation and Communication
5. Fitness for Work
6. Work Environment
7. Risk Assessment / Management
8. Hazard Reporting
9. Workplace Inspections
10. Safe Work Procedures (SWP)
11. Job Safety Analysis
12. Training and Development
13. Accident / Incident Reporting
14. Contractor Management
15. Document Control
16. Principle Hazard Management Plans
17. Health Control Plan / Health Monitoring Form
18. Environmental Policy
19. Environmental Induction Checklist
20. Vehicle Maintenance Records
21. Principle Hazard Management Plan & Airbourne Contaminants

I \_\_\_\_\_ of \_\_\_\_\_ acknowledge the SMS of Hodgson Quarries & Plant Pty Ltd and will work within those perimeters at all times

\_\_\_\_\_ Dated \_\_\_\_\_



# Hodgson Quarries & Plant Pty Ltd

## Workplace Environmental Check List

Date: \_\_\_\_\_

Inspected by: \_\_\_\_\_

*Please circle the appropriate to indicate compliance or noncompliance.*

### Workshop Bulk Oils

Are all drums sealed and in good condition	Yes	No
Are all drums clear of residue oil	Yes	No
Are all floor surfaces clear of oil spills or residue	Yes	No
Are disused drums drained and stored safely	Yes	No
Is the area cleared of rubbish / oily rags	Yes	No
Is there oil sorb available for spills	Yes	No
Are all transfer hoses and pumps in good working order	Yes	No
Are all drums clearly marked or labelled	Yes	No

**Comments:** \_\_\_\_\_

### Chemical Storage Bay

Is the storage bay in good order with no leaks or damage	Yes	No
Are all the drums sealed and in good condition	Yes	No
Are all drums clear of chemical residue	Yes	No
Are all drums clearly marked or labelled	Yes	No

**Comments:** \_\_\_\_\_

### Waste Oil Bay

Inspected and clear of any leaks	Yes	No
Is the area clear of any spills or oil residue	Yes	No
Are storage containers (IBC's) in good condition and free of leaks	Yes	No
Are waste containers stored in an appropriate manner	Yes	No
Are suitable containers available for collecting waste oil	Yes	No
Is the area clear of oily rags or other rubbish	Yes	No

**Comments:** \_\_\_\_\_

# Hodgson Quarries & Plant Pty Ltd

## **Container Oil Storage**

Are all drums sealed and in good condition	Yes	No
Are all drums clear of oil residue	Yes	No
Are all floor surfaces clear of oil spills or residue	Yes	No
Are the bund drums in good order and clear of oil residue	Yes	No
Are all drums stored in the bund drums	Yes	No
Is the oil clear of rubbish / oily rags	Yes	No
Is there oil sorb available for oil spills	Yes	No
Are all transfer hoses and pumps in good working order	Yes	No
Are all drums clearly marked or labelled	Yes	No

**Comments:** \_\_\_\_\_

---

## **Diesel Storage Area**

Tanks inspected and clear of any leaks	Yes	No
Bund area inspected and clear of any leaks or damage	Yes	No
Are there any evidence of leaks or spills in the area	Yes	No
Is the bowser hose and pump in good order	Yes	No

**Comments:** \_\_\_\_\_

---

## **General Site Inspection**

Are there any visible oil or grease stains on site	Yes	No
Are there any oil, chemical, grease drums or cartridges littering site	Yes	No
Are there any oily or greasy rags littering site	Yes	No
Are all oil, chemical, grease drums or cartridges stowed correctly	Yes	No
Are machine leaks been captured by waste oil drums	Yes	No
Is there any significant erosion that needs attention / repair	Yes	No

**Comments:** \_\_\_\_\_

---

# Hodgson Quarries & Plant Pty Ltd

## Consultation and Communication

### 1.0 Purpose

The purpose of this document is to ensure good communication on health and safety throughout the workplace.

### 2.0 SCOPE

To ensure all employees have the opportunity to have input into health and safety matters through the use of toolbox meetings.

### 3.0 DEFINITIONS

Consultation            seek information or advice from another person taking into account their feelings, interests and expertise

Communication        process of passing on information in a variety of ways so that the receiver understands the same message as the transmitter intended to give.

Information	Who's to Receive	When	How	Sent By
Safety Alerts	All	As Received	Notice boards, internal mail	Manager
Safety statistics	Committee, All	Monthly	Notice board, reports	Manager
Current incidents	All	As occurs	Tool box meetings	Manager, Team Leader
Updates to legislation	Supervisors, Committee	As occurs	Committee meetings, reports	Manager
Health and Safety information	All	At least monthly	Notice boards, toolbox meetings	All to contribute
Changes to Safety Management System	All	As occurs	Toolbox meetings, notice boards MSMP manual	Manager, Team Leader

# Hodgson Quarries & Plant Pty Ltd

## Toolbox Meeting Minutes

<b>Participants:</b>	<b>Date:</b>	<b>Time:</b>	
	<b>Supervisor:</b>		
	<b>Issues Discussed:</b>		
	<b>Key Points Arising:</b>		
<b>Points Requiring Follow Up:</b>	<b>Who:</b>	<b>When:</b>	

# Hodgson Quarries & Plant Pty Ltd

## Truck Driver Induction Code of Conduct

### **1. Purpose**

To ensure all drivers who are approaching & entering the Maroota Site know the correct procedures.

### **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:**

- Comply with all NSW government rules and regulations, including all posted, school zone and work-site speed limits;
- Comply with RMS regulations and never leave the quarry overloaded;
- Minimise potential conflict school buses;
- Attend regular safety meetings with appropriate supervisor/manager;
- Hold a valid driver's licence for the class of vehicle that is operated and must immediately report any changes to the status of their licence.
- Operate the vehicle in a safe and quiet manner within and external to the Quarry site;
- Comply with all directions of site personnel when onsite;
- Assess tipping areas for hazards and follow the tipping instructions.
- Comply with the Roberts Road Quarry WHSMS.
- Always display courtesy and restraint towards other road users and employ defensive driving techniques to avoid accidents;
- Conduct a prestart on the vehicle to ensure the vehicle is safe to operate, if it's not safe DO NOT OPERATE IT, report defects to the quarry manager.
- Drivers will present fit for work, Refer to Fitness for Work and Drugs and Alcohol policies.

**On approach to the quarry** (entering Roberts Rd) minimum speed is insisted on,

- **In particular early morning**, at no times is compression braking permitted.
- In advance on entering the quarry contact should be made to the Loader Operator via UHF Ch.28, only say “**One at the gate**”, do not mention who you are working for.
- Speed whilst in the quarry is strictly “**WALKING PACE ONLY**” low range.
- All PPE must be worn at all times, including high visibility clothing, safety boots, while moving about the quarry site.
- Never approach an operating mobile machine from the rear of the machine.
- If it is necessary to approach, then contact should first be made with the operator by radio if possible, otherwise remain in your truck until called to get your docket.
- Do not approach machinery until eye contact is made with operator & he/she acknowledges your presence and equipment is grounded.
- When exiting the quarry after being loaded, call out “Truck up Haul Road”.

Inductee: \_\_\_\_\_ Inductor: \_\_\_\_\_  
Date: \_\_\_\_\_ Date: \_\_\_\_\_

Hodgson Quarries & Plant Pty Ltd	
<b>TRUCK DRIVER INDUCTION</b>	
Author: Stuart Reed	
Approved by: Martin Hodgson	
DATE OF ISSUE: 1/12/2021	ISSUE NUMBER: 6.0
PAGE NUMBER: 2 of 2	

A solid green rectangular block is positioned on the left side of the page, partially overlapping the 'Appendix P' text.

## Appendix P

## Correspondence

Department of Planning and Environment

Stuart Reed  
Hodgson Quarries and Plant Hire P/L  
PO Box 1778  
Gosford NSW 2250

16/05/2022

**Roberts Road Quarry (DA267-11-99)  
Annual Review**

Dear Mr Reed

Reference is made to the Annual Review for the period 1 January 2021 to 31 December 2021, submitted to the Department of Planning and Environment (the **department**) on 30 March 2022 as required under Condition 66 of DA267-11-99 (the **consent**, as modified).

The department has reviewed the Annual Review and considers it to generally satisfy the reporting requirements of the consent and the department's *Annual Review Guideline* (October 2015). Please make publicly available a copy of the 2021 Annual Review on the company website.

Please note that the department's acceptance of this Annual Review is not an endorsement of the compliance status of the project. Non-compliances identified in the Annual Review will be assessed in accordance with the department's Compliance Policy. Further correspondence may be sent in relation to non-compliances.

Should you wish to discuss the matter further, please contact Maria Divis, Senior Compliance Officer, on 02 8275 1156 or [compliance@planning.nsw.gov.au](mailto:compliance@planning.nsw.gov.au).

Yours sincerely



Julia Pope  
Team Leader Compliance - Metro  
Compliance

As nominee of the Planning Secretary





## Post Approval

### Proponent Details

#### Personal Details

Title	Mr
First Name	Stuart
Last name	Reed
Email	hodgsonquarries@gmail.com
Phone	0418277871
Role/Position	Environmental Officer - Hodgson Quarries and Plant Hire Pty Ltd
Address	PO Box 1778 Gosford New South Wales 2250 AUS

#### Company Details

Applying as a company/business?

No

### Post Approval Details

Project:

Roberts Road Quarry - DA267-11-99-PA-27

Name of Document

Notification of Air Quality Criteria Exceedance

Related matter

Incident or non-compliance Report

Type of Document Lodgement

New Document

Description of the document and reason for submission / Overview of changes made to existing documents

Please let this letter serve as notice that Hodgson Quarry and Plant Pty Ltd has notified the Department of Planning and Environment that an exceedance of a performance criteria condition has occurred

#### Applicable Conditions

Schedule	Condition
2	28
2	64
2	68

#### Consultation through the Major Projects portal

Consultation required as part of the preparation of the document?

No

#### Attachment of Post Approval application

File Name	Category
Letter_12173_220419.pdf	Post Approval Document

19<sup>th</sup> April 2022



Secretary

Department of Planning and Environment  
Locked Bag 5022  
Parramatta, NSW 2124

Via Major Projects Portal.

To Secretary,

## RE: Notification of Exceedance of Air Quality Criteria, DA 267-11-99

Please let this letter serve as notice that Hodgson Quarry and Plant Pty Ltd (Hodgson) has notified the Department of Planning and Environment that an exceedance of a performance criteria condition has occurred at the Robert Road, Maroota Sand Quarry, DA 267-11-99.

### 1.1 Condition Exceeded

#### **DA 267-11-99, Schedule 2:**

##### ***Air Quality Criteria***

**28.** *The Applicant shall take all practical steps to manage the development so that the ambient air quality goals for .... the dust deposition goal of 4gm/m<sup>2</sup> (annual average) are not exceeded as a result of the development, when measured at any monitoring location specified in the Air Quality Management Plan.*

Hodgson received report number 12665 on 11<sup>th</sup> April 2022, stating that the dust deposition gauge located near the entrance to the Roberts Rd site had an Insoluble Solids level of 21.2 g/m<sup>2</sup>/month for the period ending 1/4/2022. Following this high monthly result, Hodgson requested the laboratory to provide an Annual Average calculation, which was received on the 12<sup>th</sup> April 2022. The Annual Average for the D1 gauge was reported as 4.4 g/m<sup>2</sup>/month for the 12 months ending 1<sup>st</sup> April 2022.

### 1.2 Investigation and Causes

#### **DA 267-11-99, Schedule 2:**

**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. .... 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*

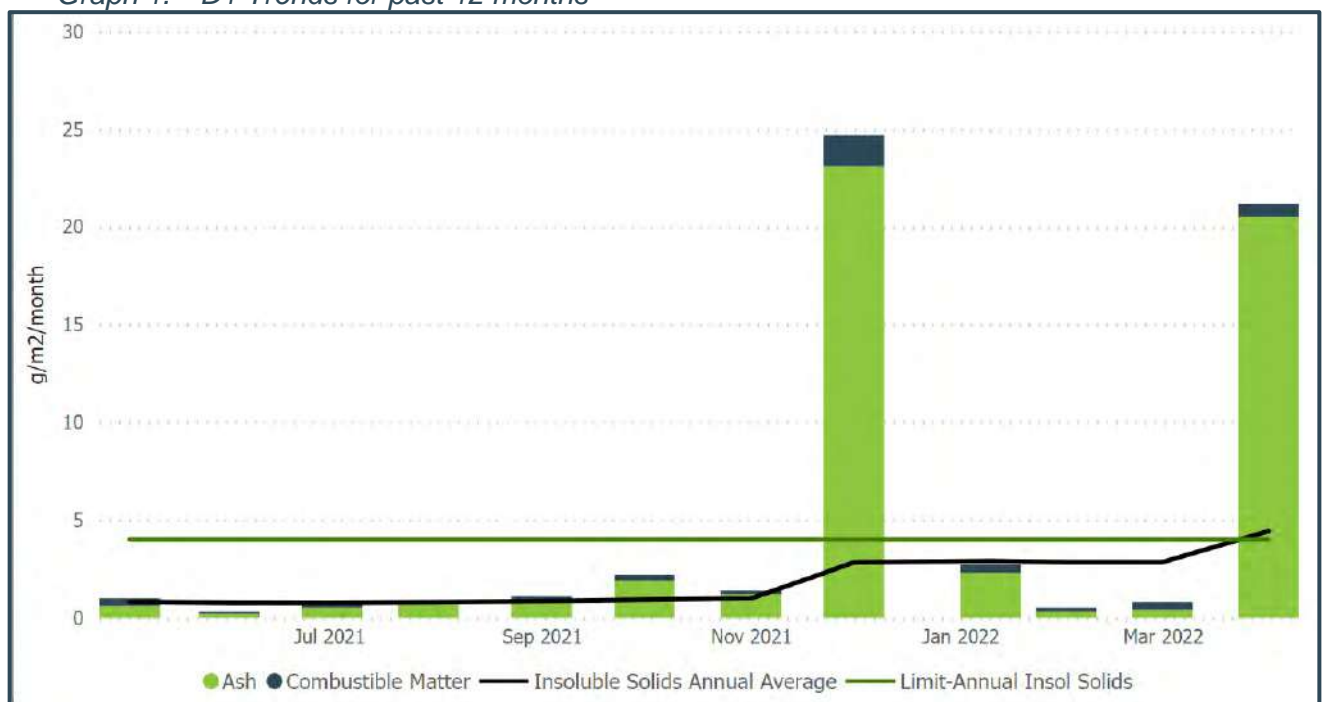
*(c) implement remediation measures as directed by the Secretary, to the satisfaction of the Secretary.*

The laboratory provided the following summary of results for the previous 12 months. Note that the Date axis on the graph indicates date of the end of the sampling period.

Table 1. Results for previous 12 months

Date Start	Date End	No of Days	Insoluble Solids g/m2/month	Ash g/m2/month	Combustible Matter g/m2/month
3/03/2021	8/04/2021	36	0.4	0.4	<0.1
8/04/2021	4/05/2021	26	1.0	0.6	0.4
4/05/2021	2/06/2021	29	0.3	0.2	0.1
2/06/2021	2/07/2021	30	0.7	0.5	0.2
2/07/2021	30/07/2021	28	0.7	0.7	<0.1
30/07/2021	1/09/2021	33	1.1	0.9	0.2
1/09/2021	1/10/2021	30	2.2	1.9	0.3
1/10/2021	1/11/2021	31	1.4	1.2	0.2
1/11/2021	1/12/2021	30	24.7	23.1	1.6
1/12/2021	10/01/2022	40	2.7	2.3	0.4
10/01/2022	1/02/2022	22	0.5	0.3	0.2
1/02/2022	1/03/2022	28	0.8	0.4	0.4
1/03/2022	1/04/2022	31	21.2	20.5	0.7
<b>Average</b>			<b>4.8</b>		

Graph 1. D1 Trends for past 12 months



While the contracted sampler made no field comments, the laboratory reported that the filtered sample contained sand, corroborated by the high Ash and low Combustible Matter results for both November 2021 and March 2022. A review of diary notations revealed that the following extraordinary works were undertaken.

*Table 2. Dates of Extraordinary Works*

Date	Description	Insoluble Solids (g/m <sup>2</sup> /month)
<b>November 2021</b>	Bund wall pushed up adjacent to gauge to slow water runoff during excessive rainfall events. Heavy equipment was used to assist with waste management activities.	24.7
<b>March 2022</b>	The area around the gauge was slashed twice during the month due to warm, wet weather producing good growing conditions	21.2

The second high result in 12 months has pushed the Annual Average higher than the required 4 g/m<sup>2</sup>/month.

### 1.3 Mitigation Measures

The Annual Average for the D1 gauge will not decrease below 4 g/m<sup>2</sup>/month until November 2022 when the first high result is no longer included in the Annual Average calculation, regardless of any mitigation methods undertaken.

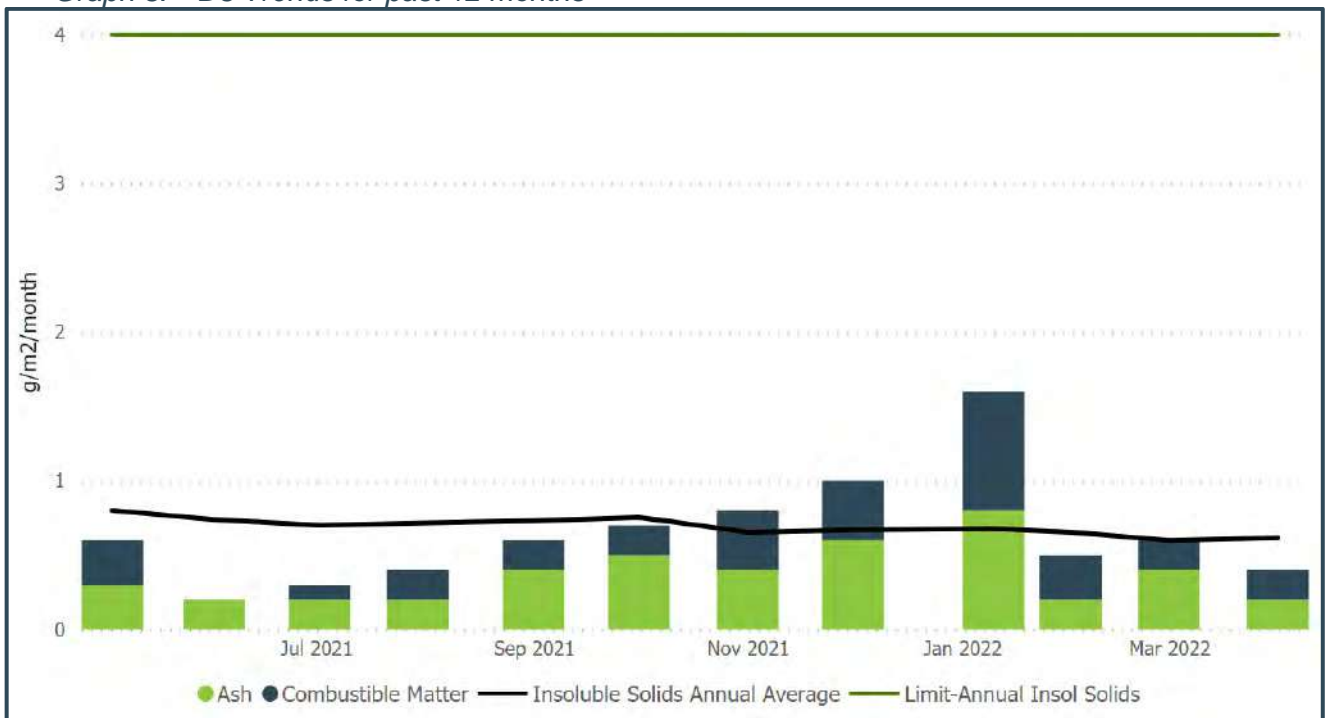
Waste management and weed management activities were undertaken at the request of the Department of Planning and Environment, and not undertaking these activities would have put the site in breach of other site conditions. No further earth works are planned for the area around the gauge, and weed management activities will be reduced to once per month to minimise impact on the gauge.

*Table 1* shows that the site has managed the depositional dust well in all other months during the period. Results at the gauges adjacent to sensitive receivers (*Graph 2* and *Graph 3*) show annual averages around 1 g/m<sup>2</sup>/month, well below the annual limit. These results show that impacts off the site have been below the required criteria and remediation activities are not required.

Graph 2. D2 Trends for past 12 months



Graph 3. D3 Trends for past 12 months



## 1.4 Reporting

The development consent conditions require the following reporting.

### ***Incident Reporting***

*68. The Applicant shall immediately notify the Secretary and any other relevant agencies of any incident. Within 7 days of the date of the incident, the Applicant shall provide the Secretary and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.*


This letter serves notice that the DPE has been notified of an incident, and that this incident will continue until November 2022, regardless of any mitigation actions to be undertaken by the proponent.

This report has been submitted via the Major Projects Portal within 7 days of the proponent becoming aware of the Annual Average breach.

The environment protection licence for the site has no monitoring or air quality criteria requirements, therefore this report will not be forwarded to the EPA unless required by the Secretary.

If you have any questions please do not hesitate to contact Lisa Thomson (environmental consultant) on [lisa@vgt.com.au](mailto:lisa@vgt.com.au) or 0427 334471, or Stuart Reed (environmental manager) on [hodgsonquarries@gmail.com](mailto:hodgsonquarries@gmail.com) or 0418 277 871.

Regards,



Lisa Thomson, BAppSc (Chem), MIQA, MRACI, CChem  
Environmental Consultant.

**From:** [no-reply@majorprojects.planning.nsw.gov.au](mailto:no-reply@majorprojects.planning.nsw.gov.au)  
**To:** [Submissions](#)  
**Cc:** [Maria.Divis@planning.nsw.gov.au](mailto:Maria.Divis@planning.nsw.gov.au); [hodgsonquarries](#)  
**Subject:** Roberts Road Quarry - Incident Notification - exceedance  
**Date:** Thursday, 28 April 2022 10:12:51 AM  
**Attachments:** [..datacontent\magerte\images\logo1644468813661.png](#)

---

This email is to acknowledge receipt of the Incident Notification - exceedance for the Roberts Road Quarry .

The Department has no comments on the document at this time.

If you have any enquiries, please contact Maria Divis on 02 8275 1156 at [Maria.Divis@planning.nsw.gov.au](mailto:Maria.Divis@planning.nsw.gov.au).

To sign in to your account click [here](#) or visit the [Major Projects Website](#).  
Please do not reply to this email.

Kind regards

The Department of Planning and Environment



[Subscribe to our newsletter](#)

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This email is intended for the addressee(s) named and may contain confidential and/or privileged information.

If you are not the intended recipient, please notify the sender and then delete it immediately.

PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING THIS EMAIL

Mr Stuart Reed  
Environmental Officer  
PO Box 1778  
Gosford New South Wales, 2250

28/02/2023

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Subject: **Roberts Road Quarry, Air Quality Monitoring Review**

---

Dear Mr Reed

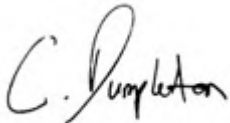
I refer to your submission dated 1 February 2023, of the Air Quality Monitoring Review (revision 1, 30/01/2023).

I also acknowledge your response to the Department's review comments and request for additional information.

Please ensure you implement the findings of the review as per the requirements of the condition of consent 29A.

If you have any questions, please contact Paul-James Caruana, who can be contacted on 8229 2900 or via email at [paul-james.caruana@dpie.nsw.gov.au](mailto:paul-james.caruana@dpie.nsw.gov.au).

Yours sincerely,



Carl Dumpleton  
Team Leader  
Resource Assessments  
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

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