DARACON Group

ARDGLEN QUARRY

2023 Annual Environmental Management Report (AEMR)

PROJECT APPROVAL MP 06_0264 - MOD 2

TITLE BLOCK

Table 1: Ardglen Quarry – Title block

Name of operation	Ardglen Quarry
Name of operator	Buttai Gravel Pty Ltd (Daracon Quarries)
Development consent / project approval #	Project Approval MP 06_0624 MOD 2
Name of holder of development consent / project approval	Buttai Gravel Pty Ltd (Daracon Quarries)
Annual Review start date	1st January 2023
Annual Review end date	31st December 2023
I, Luke Robinson, certify that this audit report is a true and accurate record of the compliance status of Ardglen Quarry for the period 1st January 2023 to 31st December 2023 and that I am authorised to make this statement on behalf of Buttai Gravel 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	Luke Robinson
Title of authorised reporting officer	Systems Manager – Construction Materials
Signature of authorised reporting officer	
Date	28th March 2024

STATEMENT OF COMPLIANCE

Table 2: Ardglen Quarry – Statement of compliance

Were all of the conditions of the relevant approval complied with?	No

SUMMARY OF 2022 INDEPENDENT ENVIRONMENTAL AUDIT (IEA) NON-COMPLIANCES

Table 3: Ardglen Quarry – Summary of 2022 IEA non-compliances

Condition #	Condition / description	Compliance status – refer legend below	Comment	Where addressed in AEMR
CONSENT - MP 06_0264				
Schedule 2, Condition 2	Some non-conformances against the conditions of the MP 06_0264 and the Statement of Commitments from MP 06_0264 were noted during the audit period. These non-conformances are summarised below in this table.		Detailed responses are provided within the various sections listed below.	
STATEMENT OF COMMITTMENTS				
SoC 1	Some non-conformances against the conditions of the MP 06_0264 and the Statement of Commitments from MP 06_0264 were noted during the audit period. These non-conformances are summarised below in this table, with further detail provided in Appendix B of Attachment 1 of the IEA.		Detailed responses are provided within the various sections listed below.	

SoC 12	The application of wet suppression or chemical coating to static stockpiles was not being undertaken at the time of audit.		Following a significant amount of time in 'care and maintenance', work on site recommenced during 2023 (without entering the extension area). There are now full-time staff and a watercart present on site so the wet suppression of stockpiles was actively occurring during the reporting period.	Section 4.3

SUMMARY OF 2022 INDEPENDENT ENVIRONMENTAL AUDIT (IEA) RECOMMENDATIONS

Table 4: Ardglen Quarry – Summary of 2022 IEA recommendations

Condition #	Condition / description	Compliance status – refer legend below	Comment	Where addressed in AEMR
CONSENT - MP 06_0264				
Schedule 3, Condition 44	It is recommended that AQ implement offsite visual and lighting mitigation measures prior to the recommencement operations, and update site Management Plans accordingly, to the satisfaction of DPHI.		There is currently no external lighting associated with the operation of Ardglen Quarry, however if this was to change in the future, then Daracon would ensure compliance with Australian Standard AS4282 (INT) 1995 – Control of Obtrusive Effects of Outdoor Lighting to the satisfaction of the Director-General.	Section 2.7
STATEMENT OF COMMITTMENTS				
SoC 12	Consider including flexibility in the AQMP for not using wet suppression or chemical coating on all static stockpiles, where this will not result in significant reductions in air quality emissions.		Following a significant amount of time in 'care and maintenance', work on site recommenced during 2023 (without entering the extension area yet). There are now full-time staff and a watercart present on site so the wet suppression of stockpiles was actively occurring during the reporting period.	Section 4.3

COMPLIANCE STATUS LEGEND

Risk level	Colour code	Description
High	Non-compliant	Non-compliance with potential for significant environmental consequences, regardless of the likelihood of occurrence
Medium	Non-compliant	Non-compliance with: • potential for serious environmental consequences, but is unlikely to occur; or • potential for moderate environmental consequences, but is likely to occur
Low	Non-compliant	Non-compliance with: • potential for moderate environmental consequences, but is unlikely to occur; or • potential for low environmental consequences, but is likely to occur
Administrative non-compliance	Non-compliant	Only to be applied where the non-compliance does not result in any risk of environmental harm (e.g. submitting a report to government later than required under approval conditions)

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1. INTRODUCTION

1.1 Scope

This report has been prepared by Daracon Quarries, in accordance with Schedule 5 Condition 4 of the Project Approval MP 06_0264 to record the activities and environmental monitoring undertaken within and surrounding Ardglen Quarry during the period 1st January 2023 to 31st December 2023 (the reporting period).

Figure 1 and **Figure 2** below, show the location and details of the quarry site.

Figure 1: Quarry Location

On 2nd December 2008 Daracon was granted approval (Project Approval MP 06_0264) under part 3A of the Environmental Planning & Assessment Act 1979 to extend the existing quarry operations in a westerly direction into Lot 218 (DP 751028). In December 2010, Modification 1 (Mod 1) for Project Approval MP 06_0264 was implemented whilst in March 2021 Modification 2 (Mod 2) was approved.

Daracon ceased quarrying operations at Ardglen Quarry in February 2012 and the site was placed into “care and maintenance” at that time.

In August 2018, Ardglen quarry was taken out of "care and maintenance" due to the need for material at the Scone Bypass Project (SBP). This was communicated to the community and relevant regulatory authorities as part of the recommencement process. The export of material from Ardglen quarry to the SBP was completed in early 2020.

During 2023, the quarry recommenced operations with the screening, blending and exporting previously quarried material to various projects / clients occurring.

Construction, preparation and preliminary work also continued to occur on site including the water management system, crushing pad, noise mitigation and other tasks.

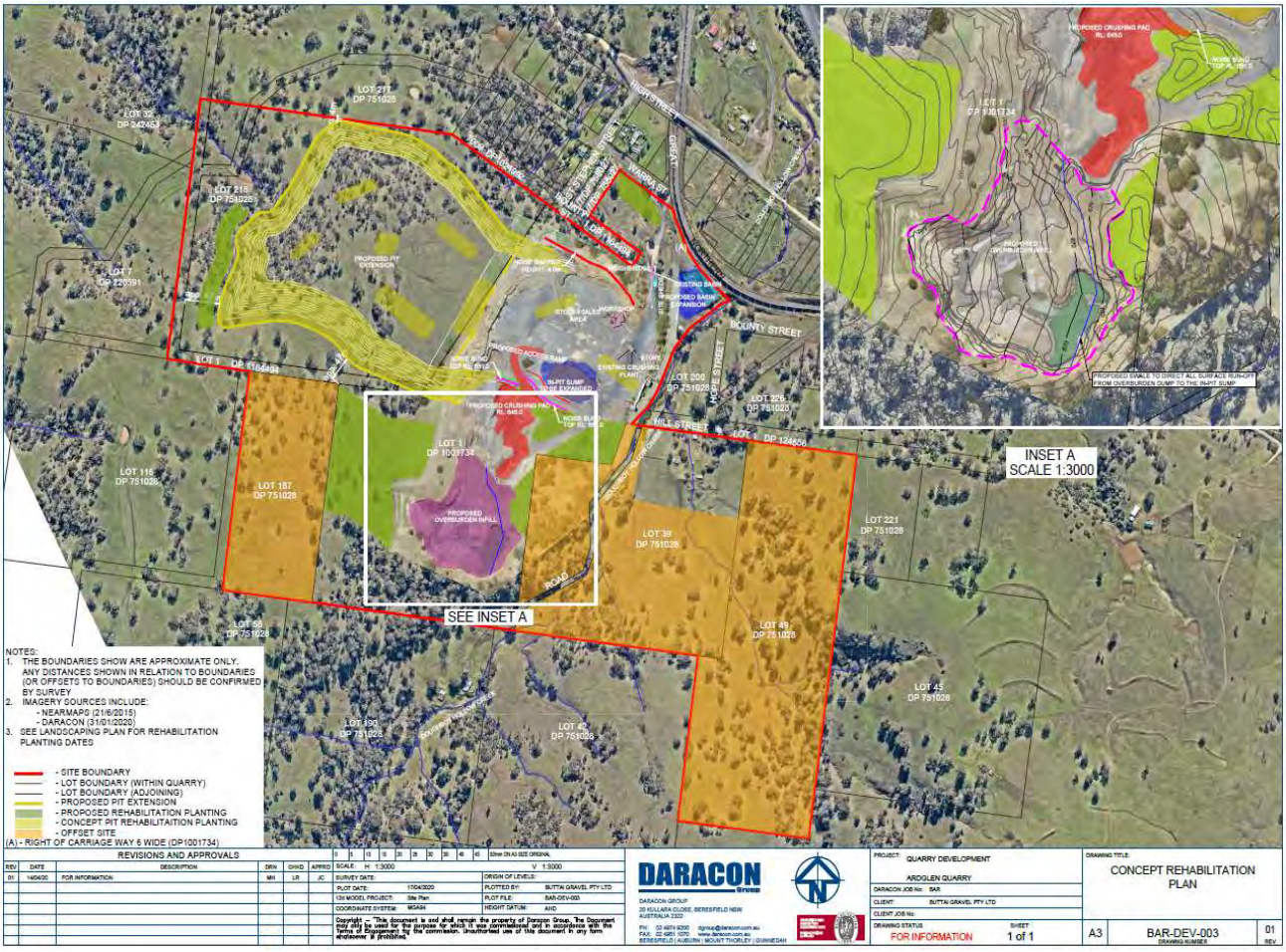


Figure 2: Quarry boundary, disturbance area and offset areas (taken from Appendix 2 of Mod 2)

This document provides an overview of activities and environmental monitoring that occurred within the reporting period and also activities and environmental monitoring planned for 2024. This Annual Environmental Management Report (AEMR) contains the following:

- A description of activities that were carried out in 2023;
- A review of the environmental monitoring results that were carried out in 2023;
- Results of the Independent Environmental Audit that was carried out in 2022;
- A description of measures that will be implemented throughout 2024 to maintain and/or improve the environmental performance of the Quarry;

1.2 Standards and Performance Measures

The owner and operator of Ardglen Quarry, Daracon Quarries (Trading as Buttai Gravel Pty Ltd) is required to operate the approved activities within the Quarry site in accordance with MP 06_0624 MOD 2 and licences listed in **Table 5.**

Table 5 – Ardglen Quarry - Consents and Licences

Approval/Licence	Issue Date	Expiry Date
Project Approval MP 06_0624 MOD 2	March 2021	31 August 2038
Environment Protection Licence (EPL) No.1115	N/A	1 January (anniversary date)

Relevant conditions with Project Approval MP 06_0624 which nominate specific environmental criteria are as follows:

- *Schedule 3 Condition 1:* Hours of Operation
- *Schedule 3 Condition 2:* Noise
- *Schedule 3 Condition 7:* Blasting and Vibration
- *Schedule 3 Condition 15:* Air Quality

- *Schedule 3 Condition 18:* Meteorological Monitoring
- *Schedule 3 Conditions 18A – 18F, plus others:* Surface and Ground Water
- *Schedule 3 Conditions 24 - 32:* Rehabilitation and Landscape Management
-

In addition to the specific environmental criteria, the following conditions within MP 06_0624 specifically request further information be included in each AEMR:

- *Schedule 3 Conditions 33 - 43: Product Transport*
- *Schedule 3 Conditions 44: Visual Impact*
- *Schedule 3 Conditions 45: Aboriginal and Cultural Heritage*
- *Schedule 3 Condition 46: Greenhouse Gas*
- *Schedule 3 Condition 47:* Waste Minimisation

Daracon have reviewed and revised the Environmental Management Strategy (EMS) in accordance with Schedule 5, Condition 1 the approved consent. The revised EMS has been developed by using the Daracon Integrated Facility Management Plan (IFMP). Daracon have also implemented a strategy to ensure the various management plans are reviewed, revised and updated (if necessary) in accordance with the Approval. At the time of this report, the DPHI approval of the IFMP was awaiting the completion of the outstanding sub-plans (LMP and SWMP) before it could be resubmitted for approval.

Additionally, Daracon commits to compliance with all Management Plans approved by the Department of Planning, Housing and Infrastructure (DPHI) and the display of all approved Management Plans on the Daracon website.

1.3 Site Management and Responsibilities

The overall management of Ardglen Quarry is the responsibility of Daracon's Quarries Manager, Mr Paul Walker with delegated site supervision tasks completed by Geoff Reeves (Supervisor). Other companies involved with quarry related documentation and monitoring data include:

- RCA Aust. Pty Ltd Laboratories;
- Rubicon Enviro Pty Ltd;
- Umwelt Australia Pty Ltd;

1.4 Document Preparation

The following information and data for this report has been drawn from documents commissioned or held by Daracon.

- Environmental Management Strategy Ardglen Quarry Extension - Major Project 06/0264, September 2010, Orogen Pty Ltd;
- Ardglen Quarry Environmental Monitoring records;
- Other relevant management plans, reports and studies associated with the site;

This document has been prepared by Mr Luke Robinson of Daracon Quarries.

In response to enquiries received from DPHI during the reporting period, **Table 6** below includes the details of specific requests for additional information as well as the relevant action taken.

Table 6: DPHI requests for additional information

DPHI requests	Action taken
The DPHI 2022 AEMR acknowledgement correspondence requested additional information be included in the 2023 AEMR as follows: • a figure showing the current operational footprint in relation to development consent boundary on an up-to-date aerial photo • a figure clearly showing the rehabilitation:	The current AEMR (this report) includes this information in Section 2.1, **Appendix 10** and Section 2.12

a. undertaken in the current reporting period; b. undertaken in previous reporting period(s); c. planned for the next reporting period;	
Ongoing review and approval of Management Plans	During the course of 2023, Daracon interacted with DPHI on multiple occasions regarding the review and approval of various management plans for the site.
Ardglen Community Consultative Committee (CCC) enquiries through the DPHI	DPHI provided an enquiry / complaint in early 2024 (that was consistent with an enquiry received from local resident in December 2023) regarding the local ground water wells drying up and Doughboy Hollow Creek not flowing. Daracon answered this query and subsequently spent a significant amount of time explaining the likely causes to the complainant. This information was also provided to DPHI.

In response to a previous enquiry received from DPHI, **Table 7** below includes the details of specific actions resulting from previous AEMR's.

Table 7: Specific Actions from previous AEMR's

Actions from previous AEMR's	Requested by	Action taken	Where discussed in AEMR
Long term security of the Biodiversity Offset areas	Daracon	As previously advised, Daracon is progressing with the Conservation Agreement (CA) including ongoing consultation with the Biodiversity Conservation Trust (BCT). At the time of this AEMR submission, the CA underwent multiple reviews and revisions with the most recent version received from BCT on the 11th of March 2024. This version of the CA is awaiting signing by Daracon directors.	Section 2.12

2. OPERATIONS DURING THE REPORTING PERIOD

2.1 Introduction

Prior to August 2018, Ardglen quarry had been in 'care and maintenance' for many years. Ardglen quarry was taken out of 'care and maintenance' during the latter part of 2018 due to the need for material at the Scone Bypass Project (SBP). The export of material to the SBP continued intermittently during 2018 and 2019 whilst the project was completed and opened in early 2020.

During 2023, the quarry recommenced operations with the screening, blending and exporting previously quarried material to various projects / clients occurring.

Construction, preparation and preliminary work also continued to occur on site including the water management system, crushing pad, noise mitigation and other tasks.

Additionally, a new figure showing the current operational footprint in relation to development consent boundary on an up-to-date aerial photo has been included with this AEMR as shown in **Appendix 10**.

Table 8 lists the activities that occurred at Ardglen Quarry throughout 2023.

Table 8: Operations during the Reporting Period

January	No quarry operations and no export of material from the quarry occurred. Weekly Site Inspections, environmental monitoring and intermittent maintenance of rehabilitation areas.
February	No quarry operations and no export of material from the quarry occurred. Weekly Site Inspections, environmental monitoring and intermittent maintenance of rehabilitation areas.
March	No quarry operations and no export of material from the quarry occurred. Weekly Site Inspections, environmental monitoring and intermittent maintenance of rehabilitation areas. Daracon Quarterly environmental inspection occurred.
April	No quarry operations and no export of material from the quarry occurred. Weekly Site Inspections, environmental monitoring and intermittent maintenance of rehabilitation areas.
May	No quarry operations and no export of material from the quarry occurred. Weekly Site Inspections, environmental monitoring and intermittent maintenance of rehabilitation areas. The April 2023 CCC meeting occurred.
June	The demolition of the existing 'tertiary crushing plant' occurred in accordance with the relevant Council consent. No quarry operations and no export of material from the quarry occurred. Weekly Site Inspections, environmental monitoring and intermittent maintenance of rehabilitation areas. Rubicon annual environmental inspection occurred.
July	The new truck wheel-wash was installed. No quarry operations and no export of material from the quarry occurred. Weekly Site Inspections, environmental monitoring and intermittent maintenance of rehabilitation areas.
August	Sorting / screening of previously quarried materials and the export of material from the quarry by road recommenced. Weekly Site Inspections, environmental monitoring and intermittent maintenance of rehabilitation areas. Noise monitoring.
September	Sorting / screening of previously quarried materials and the export of material from the quarry by road occurred. Weekly Site Inspections, environmental monitoring and intermittent maintenance of rehabilitation areas. Daracon Quarterly environmental inspection occurred. Noise monitoring.
October	Sorting / screening of previously quarried materials and the export of material from the quarry by road occurred. Weekly Site Inspections, environmental monitoring and intermittent maintenance of rehabilitation areas. Noise monitoring.
November	Sorting / screening of previously quarried materials and the export of material from the quarry by road occurred. Weekly Site Inspections, environmental monitoring and intermittent maintenance of rehabilitation areas. Noise monitoring.
December	Sorting / screening of previously quarried materials and the export of material from the quarry by road occurred. Weekly Site Inspections, environmental monitoring and intermittent maintenance of rehabilitation areas. Noise monitoring. Daracon Quarterly environmental inspection occurred.

2.2 Extraction And Clearing Operations

No clearing, blasting, quarrying or extraction operations took place in the extension area during the reporting period.

At the time of this report, we expect to enter the extension area and recommence blasting, quarrying and extraction operations sometime during the 2nd quarter of 2024. We'll ensure DPHI and the CCC are informed if blasting, extraction and crushing (quarrying) operations are likely to recommence on site.

2.3 Production and Processing Operations

As shown in **Table 9**, there was a small quantity of existing material screened but there was no crushing of material from the extension area.

Table 9: Ardglen Quarry Production (tonnes)

Materials	Approved limits	Previous reporting period	This reporting period	Next reporting period (forecast)
Screening / handling and exporting of existing materials (T)	The maximum amount permitted to be extracted, processed and exported is 500,000T per year	0	16908	Unknown
Re-crushing / handling and exporting of existing materials (T)		0	0	Unknown
Crushing / screening / handling and exporting of material extracted from the 'Extension Area' (T)		0	0	Unknown
Total		**0**	**16908**	**Unknown**
Source: Ardglen tracking records				

2.4 Overburden and Silt Management

Nil overburden was removed during 2023.
Nil silt removal occurred during 2023.

2.5 Waste Management

During 2023, the waste generated from site was:

- General Demolition Waste – Nil;
- Recyclable Concrete – Nil;
- Paper & Cardboard – Nil;
- Scrap Steel – 93.452 T;
- Recyclables – Nil;
- Waste Oil – Nil;
- Waste Oil Filters – Nil;
- Empty Drums – Nil;
- Grease – Nil;
- Oily Water – Nil;
- Batteries – Nil;
- Asbestos Containing Material – Nil;

2.6 Emissions

Daracon is committed to ongoing greenhouse gas emission reduction strategies as part of the operation of Ardglen Quarry. The mitigation measures currently employed on site to ensure particulate matter emissions are minimised include:

- Sealing the haul road to the wheel wash / weighbridge;
- Limiting the speed limit on unpaved surfaces to 15 km/hr;
- High level watering of unpaved road surfaces (greater than 2L/m^2/hr);
- Covering all loads leaving the site;
- Wet suppression of static stockpiles as required;

Additionally, the proposed mitigation measures to ensure particulate matter emissions are minimised include:

- Revegetation of exposed surfaces where available;
- Regular inspection and fault reporting for mobile plant and equipment;
- Prompt rectification of reported faults associated with mobile plant and equipment;
- As part of the forward planning for site, considering the use of renewable energy sources including solar, wind and battery storage for example;
- Analysing the regular NGERS / NPI reports for trends and potential avenues for emission reductions;
- Re-install a wheel wash at the end of the unpaved section of the haul road before export by road haulage can recommence from the site;
- Minimise energy consumption on site by:
  - Shutting down plant and equipment when not used;
  - Regular servicing of plant and equipment;
  - Walking in preference to vehicular use where possible;

2.7 Site Infrastructure and Services

During the reporting period, the following infrastructure/services tasks occurred:

- The demolition of the existing 'tertiary crushing plant' occurred in accordance with the relevant Council consent;
- The new truck wheel-wash was installed, commissioned and was operational as shown in **Photo 1** below;
- Following the decommissioning of the electrical substation in 2016, there's currently no external lighting associated with the operation of Ardglen Quarry, however if this was to change in the future, then Daracon would ensure compliance with Australian Standard AS4282 (INT) 1995;
- Daracon removed the truck remaining on site during the reporting period;

Photo 1: The new truck wheel-wash

2.8 Water Management

Figure 3 displays the current surface water management system in place at Ardglen Quarry. During the reporting period there was some minor maintenance to the various drainage and sedimentation control structures on site.

The Site Water Management Plan (SWMP), including the following, has recently been reviewed and uploaded to the DPHI Major Projects Portal. Subject to approval of the SWMP by DPHI, this will be enacted prior to commencing work in the Extension Area. The SWMP includes:

- An assessment of basin volumes is included as part of the revised SWMP;
- An assessment of the reliability of the water supply to the operation is included as part of the SWMP;
- Operational and maintenance activities that could cause soil erosion and sediment generation are identified and described in the SWMP;
- Procedures to manage unforeseen water quality impacts;
- Water treatment processes to enable discharge as required (in accordance with the revised EPL);
- The proposed strategy to monitor and subsequently manage any groundwater interactions on site;

Figure 3: Surface Water Management

Figure 4 below shows the indicative locations of the groundwater monitoring wells installed in 2021. Ongoing monitoring of the various groundwater parameters is ongoing for the foreseeable future.

In accordance with Mod 2, once we've obtained sufficient data relating to the various groundwater parameters, we will analyse the data collected and further develop the Groundwater study. This may require us to update the SWMP to include any subsequent management actions required to adequately address the findings of the groundwater study.

Figure 4: Ground Water Monitoring Network

Additionally, **Table 10** below summarises the various Water Access Licences (WAL's) and the quantity of water obtained during the previous water year (1 July to 30 June). It should be noted that the 'Works Approval' associated with the WAL's nominated in **Table 10** was amended in November 2021 to make work authorised under the water supply work approval **inactive** in accordance with s.95 of the Water Management Act 2000. This will remain inactive until further notice.

Table 10: Summary of Water Access Licences and water take

Water Licence #	Water sharing plan, source and mngt zone	Entitlement (units)	Passive take / inflows	Active pumping	Total
6242	Namoi and Peel unregulated rivers water sources 2012	1.00	Nil	Nil	Nil
6243	Namoi and Peel unregulated rivers water sources 2012	4.00	Nil	Nil	Nil

2.9 Bushfire Management

Minimal bushfire prevention activities occurred during this reporting period apart from selective weed spraying on site.

2.10 Hazardous Materials Management

Hazardous materials within the Quarry site are appropriately managed with incidental quantities of fuels and oils located in an appropriately bunded area. During this reporting period there was no bulk diesel fuel stored onsite. Incidental quantities of aerosols and weed poison are also stored within the appropriately bunded area.

2.11 Product Transportation

The transportation of products, both imported and exported is identified in Schedule 3 Condition 33. Condition 33 states the following including Daracon responses in red - *The Proponent shall:*

(a) keep records of the:

- *amount of quarry materials imported onto the site each year* – Refer to commentary below;
- *amount of quarrying products transported from the site each calendar year* – Refer to **Table 11**;
- *number of truck movements generated by the development on an hourly basis on any days in which truck loading and distribution occurs* - Refer to the tables in **Appendix 9**;
- *registration plate details and time of departure for all laden trucks dispatched from the quarry* - Refer to **Appendix 9***;*
- *number of train movements generated by the development, on a weekly basis* - Refer to commentary below;
- *date and time of each train movement generated by the development* - Refer to commentary below;

(b) provide annual production data to the DPI using the standard form for that purpose – Completed via separate submission to the Resource Regulator (formerly the DPI); *and*

(c) include these records in the AEMR – Included here.

During the reporting period there was no material imported to site or material exported by rail transport. Details of truck movements generated by the project during the reporting period are shown in **Appendix 9**.

As shown the **Table 11** and **Appendix 9**, all transport parameters associated with the operation of Ardglen quarry were compliant during the reporting period.

Table 11 displays the monthly/annual sales of various products exported from Ardglen Quarry during 2023.

Table 11: Sales generated from the quarry (T)

Month - 2023	Aggregates (T)	Road Pavements (T)	Other (T)	Total (T)
January	0	0	0	0
February	0	0	0	0
March	0	0	0	0
April	0	0	0	0
May	0	0	0	0
June	0	0	0	0
July	0	0	144	144
August	0	0	3829	3829
September	0	0	2578	2578
October	12	191	399	602
November	0	2482	2804	5286
December	50	1659	2760	4469
Total (T)	**62**	**4332**	**12514**	**16908**
Source: Ardglen tracking records				

Additionally, as part of the approved Mod 2 conditions, we resolved all aspects of the 2018 Road Safety Audit (RSA) which then permitted an increase to the laden vehicle movements from site (to 55 laden and 110 total per day).

Additionally, we continue to liaise with LPSC regarding a proposed 20 kph speed limit for heavy vehicles over High St bridge as noted in the Approval.

2.12 Rehabilitation

Significant rehabilitation work occurred during previous reporting periods as detailed in the revised Landscape Management Plan (LMP) and the Umwelt Ardglen Annual Biodiversity Monitoring report included as **Appendix 6**.

DPHI acceptance letter of the 2022 AEMR requested a figure clearly showing the following rehabilitation: (Daracon comments in red):
a. undertaken in the current reporting period – There was no specific rehabilitation undertaken during the reporting period apart from various administerial tasks (described below) and maintenance (including weed control) of previously planted areas;
b. undertaken in previous reporting period(s) – See **Figure 5**;
c. planned for the next reporting period – See **Figure 6** showing the proposed future rehabilitation planting areas (once at final landform);

With respect to the specific aspects of the actual rehabilitation and landscape activities that occurred during the reporting period, we provide the following status updates:

- The Offset Strategy (S3_C25) – As previously advised, Daracon is progressing with the Conservation Agreement (CA) including ongoing consultation with the Biodiversity Conservation Trust (BCT). At the time of the AEMR submission, we've received a revised DRAFT of the CA from BCT and continue to liaise with them to finalise and ratify once agreed. A copy of the most recent advice received from BCT is included in **Appendix 6** of this document (within Appendix D of the Umwelt Rehabilitation report);
- The Landscape Management Plan (S3_C27) – Following a protracted review period, the Landscape Management Plan (LMP) was approved during the reporting period;
- The Doughboy Hollow Creek Rehabilitation Strategy (S3_C28) – This was developed, consulted with various regulatory authorities, agreed and incorporated into the LMP during the reporting period. The revised LMP was approved by DPHI;
- The Rehabilitation and Biodiversity Offset Management Plan (S3_C29) – The Rehabilitation and Biodiversity Offset Management Plan forms an integral component of the revised LMP which was approved by DPHI during the reporting period;

Also refer to **Table 3** and **Table 4** for a summary of the non-compliances arising from the Independent Environmental Audit undertaken during 2022.

Please also refer to **Figure 5, Figure 6** and Section 4.4.4 for further details regarding the rehabilitation progress and suggested actions.

Figure 5: Rehabilitation planting areas (all completed prior to the current reporting period)

Figure 6: Proposed future rehabilitation areas

Photo 2: Rehabilitation planting in Offset B

2.13 Closure

The revised LMP, approved by the DPHI includes information regarding the proposed closure arrangements.

3. COMMUNITY RELATIONS

3.1 Surrounding Communities

Figure 7 displays the land ownership and residents surrounding the quarry. During the reporting period, it is understood that there were no changes to the land ownership within the area. Informal discussions have occurred with a number of residents in the area during the reporting period.

Residents of Ardglen

Figure 7: Land Ownership and Residents

Table 12: Land Owners and Residents

Land Owners and Residents	
Mingay Property	Ms P Purtell & Mr S Harnes
The State of New South Wales	Mr W E & Mrs E A Avery
County Property Group	Ms Penny Dalton
Land and Property Management Authority	Ms A Bojba-Lis
Mr and Mrs R McGhie	Ms C M Thompson
Mr D J Bates	Ms E Russell
Mr D J Burraston	Ms M Taylor
Mr G B Smith & Ms N E Ryder	Mr G N & Mrs M A Lewins

3.2 Community Consultative Committee Meetings

During the latter part of 2021, the previous Community Consultative Committee (CCC) facilitator Shay Riley Lewis advised the CCC members (including DPHI) that she was resigning from her role as the independent CCC facilitator. Following Shay's resignation, Daracon engaged the services of Michael Silver to undertake the CCC facilitator role and was subsequently approved by DPHI for such. Please refer to **Section 3.4** for further information regarding community involvement and the various CCC matters.

3.3 Environmental Complaints

Daracon received one pollution or environmental complaints during the reporting period. Due to the fact there was one complaint received (applicable to the reporting period but received afterwards in early 2024), the main difference between the complaints received during 2023 and previous reporting periods shows a very similar level, albeit slightly higher than 2022. This is most likely due the recommencement of material export and construction activities occurring on site.

3.4 Community Involvement

Firstly, it's worth noting that due to the reduced presence of COVID-19 and subsequent reduction in the restrictions imposed by the government, all Community Consultative Committee (CCC) meetings that occurred during 2023 were completed face-to-face.

The Ardglen Quarry CCC held two meetings during the reporting period, with the first during May 2023 and the second during November 2023. The meeting minutes associated with both meetings are attached in **Appendix 3**.

Furthermore, Daracon circulated a community newsletter in early 2023 to the local Ardglen and surrounding community via letterbox drop so as to provide additional information for the local residents regarding the CCC and planned activities associated with the operation of Ardglen Quarry. A copy of the 2023 newsletter is included in **Appendix 9**.

4. ENVIRONMENTAL MONITORING

4.1 Water Quality

4.1.1 Introduction

Ardglen Quarry operates under an approved Site Water Management Plan (SWMP) as described in Section 2.8 above. One of the purposes of this plan is to ensure that Ardglen Quarry does not pollute any water.

Ardglen Quarry has two sediment basins onsite, the in-pit sump which is approximately 30ML and a tertiary sediment basin which is approximately 3ML. Currently, the majority of the water from the disturbed areas are directed towards the in-pit sump and when this becomes full, water is then directed to the smaller (3ML) tertiary sediment basin for storage and re-use.

The alterations proposed as part of Mod 2 will allow us to make a number of critical improvements to the water management processes on site and to permit the appropriate discharge of water.

A variation to the EPL was approved by the EPA during 2022. Additionally, after many months of waiting for the DPHI to respond to the revised SWMP, the SWMP was eventually approved by DPHI during the reporting period.

4.1.2 Conclusion

During the reporting period, nil water was discharged over the tertiary basin spillway.

4.2 Noise and Blasting

4.2.1 Introduction

Ardglen Quarry operates under an approved Noise Monitoring Plan and Blast Monitoring Plan. These plans outline the measures which will mitigate the environmental effects of noise and blasting of the quarry activities on our neighbours and includes noise/blast monitoring programs to assess and report the levels of impact in compliance with Schedule 3 of the Project Approval. The noise and blast plans also provide a mechanism whereby any noise or blast complaints can be dealt with quickly and effectively.

The Approval also permits agreements with various landholders to be negotiated if noise exceedances are likely. Daracon currently have 'in principle' noise agreements with Bill Avery and Christine Thompson and copies of these have been provided to the EPA and DPHI.

The Blast Monitoring Plan requires monitoring to take place at specified locations as shown in **Figure 8.** Daracon have also recently approached all local landholders regarding their interest in receiving blast notifications. Once the relevant landholders that wish to receive a blast notification is known, they'll receive the relevant notifications prior to blasting as required by the Approval.

The Noise Monitoring Plan calls for monthly attended noise monitoring to be completed when the quarry is operating, and this will take place at specified noise monitoring locations as shown in **Figure 9** once the quarry recommences operations.

The site also operates strictly in accordance with the 'hours of operation' shown in Table 1 of Schedule 3 of the Approval.

Daracon have committed to reporting on any investigations and the implementation of the noise mitigation measures included in the EA associated with MOD 2. During the reporting period for this report, we note the following:

- There has been substantial progress with the implementation of the noise mitigation measures included in the EA associated with MOD 2;
- Monthly noise monitoring recommenced and will continue for the foreseeable future;

Figure 8: Blast Monitoring Locations

Figure 9: Noise Monitoring Locations

4.2.2 Noise Criteria

Table 13: Noise Criteria

NOISE IMPACT ASSESSMENT CRITERIA dB(A)				
Land	***Day LAeq (15 min)***	***Evening LAeq (15 min)***	***Night***	
			LAeq (15 min)	***LA1 (1 min)***
4	*44*	*35*	*35*	*45*
5 and 6	*45*	*35*	*35*	*45*
9	*37*	*35*	*35*	*45*
10	*38*	*35*	*35*	*45*
12 and 14	*36*	*35*	*35*	*45*
15	*43*	*35*	*35*	*45*
16	*40*	*35*	*35*	*45*
All other privately owned land	*35*	*35*	*35*	*45*

4.2.3 Noise Monitoring Results

Despite the fact we've not entered the extension area yet and there was no stripping, blasting or crushing occurring during the reporting period, the screening, stockpiling and export of existing quarried material did occur during the latter part of 2023. We therefore recommenced monthly noise monitoring in accordance with the approved Nosie Management Plan (NMP) in August 2023 and will continue to do so for the foreseeable future. Copies of noise monitoring reports from August to December 2023 are included in **Appendix 2**.

4.2.4 Blasting Criteria

Table 14: Blasting Criteria

Airblast overpressure level (dB(Lin Peak))	*Allowable exceedance*
115	*5% of the total number of blasts over a period of 12 months*
120	*0%*
Peak Particle Velocity (mm/s)	***Allowable exceedance***
5	*5% of the total number of blasts over a period of 12 months*
10	*0%*

4.2.5 Blasting Monitoring Results

No blasts were carried out during the reporting period.

4.2.6 Analysis of Results

All noise monitoring results obtained during the reporting period were compliant with the NMP, Mod 2 Consent and EPL.

No blasting occurred during the reporting period, so therefore no blast monitoring was completed.

4.2.7 Conclusion

The noise monitoring results were within the specified limits and when operations re-commence blast monitoring will then recommence.

Additionally, as part of the current MOD 2 actions in progress, we plan to make a number of critical improvements to the noise mitigation measures to enable the appropriate handling and processing of material on site.

4.3 Air Quality

4.3.1 Introduction

Ardglen Quarry operates under an approved Air Quality Management Plan. The objectives of this plan is to comply with all statutory requirements, minimise air quality impacts on surrounding residents and properties, maintain reasonable levels of amenity for surrounding residents, to keep the local community and regulators informed and to respond quickly and effectively to issues and complaints and to ensure that air quality is measured according to best practice and results are presented in a timely and transparent manner to stakeholders.

Following the completion of the IEA during the reporting period, Daracon are currently considering the specific need for ongoing wet suppression or chemical coating of static stockpiles due the extremely low risk currently experienced whilst the site is not operating and the excellent track record regarding ongoing air quality monitoring to date (obviously excluding regional poor air quality events). Following a significant amount of time in ‘care and maintenance’, work on site recommenced during 2023 (without entering the extension area yet). There are now full time staff and a watercart present on site so the wet suppression of stockpiles was actively occurring during the reporting period.

4.3.2 Meteorological Station

Condition 18 of the Approval requires that a meteorological station to operate in the vicinity of the project site for the life of the project. Daracon has installed a meteorological station (**Figure 10**), ensuring that the meteorological station complies with the requirements in the “Approved Methods for Sampling of Air Pollutants in New South Wales Guideline”.
The meteorological station currently monitors the following parameters as per EPL 1115:

- Rainfall;
- Wind Speed and Direction;
- Temperature (at 2m and 10m above ground level);

- Sigma theta;
- Solar Radiation;

4.3.3 Air Quality Monitoring Locations and Frequency

The current air quality monitoring network consists of three deposited dust gauges (DDG), two HVAS units, one TSP unit (see **Figure 10**) and a PM2.5 unit as detailed in the revised AQMP approved by DPHI.

The location of the air quality monitoring equipment (primarily to the North-East and East of the Quarry) was deduced from the location of the surrounding residences.

Figure 10: Air Quality Monitoring and Weather Station Locations

4.3.4 Air Quality Criteria

The air quality criteria for the quarry, as outlined with condition 15 (schedule 3) of the approval are provided in the below table.

Table 15: Air Quality Criteria

Parameter	Frequency	Locations	Limit/Guideline	Sampling Method
Deposited dust	Monthly.	DG-1 located at Receptor 2 (EPL point 2). DG-2 located at Receptor 5 (EPL point 3). DG-3 located at Receptor 6 (EPL point 4).	**Deposition Rate*** Maximum total deposited dust level: 4 g/m^2.month - as an annual average	AM-19 AS3580.10.1 – 2003
Total suspended particulate (TSP) matter	24 hours every 6 days for 12 months.	TSP-1 located at Receptor 2. Removed after 12 months.	**Concentration** 90 µg/m^3 - as an annual average	AM-15 AS3580.9.3 – 2003
Particulate matter < 10 µm (PM_{10})	24 hours every 6 days.	PM10-1 located at Receptor 2. PM10-2 located at Receptor 6.	**Concentration** 50 µg/m^3 - as a 24 hour average 25 µg/m^3 - as an annual average	AM-16 AS3580.9.6 - 2003
Particulate matter < 2.5 µm (PM2.5)	24 hours every 6 days.	PM2.5 located at Receptor 6.	**Concentration** 25 µg/m^3 - as a 24 hour average 8 µg/m^3 - as an annual average	
Visible air pollution	Weekly. In response to any visible emissions complaint.	Weekly site inspection. At the location of any reported emission.	**Project Approval Schedule 3, Condition 16**	No required sampling methodology apart from described above. Actions required if visual impact is suspected or confirmed.
Meteorological station	Continuous.	On site near the weighbridge.	**Project Approval Schedule 3, Condition 18**	AM-1 to AM-4 USEPA (2000) EPA 454/R-99-005
Greenhouse gases (electricity and fuel consumption)	Upon purchase of electricity or fuel.	Entire site.	**Project Approval Schedule 3, Condition 46(a)** The proponent shall monitor the greenhouse gas emissions generated by the project.	No required sampling methodology. Records of purchase, consumption and storage used to determine emissions.

4.3.5 Air Quality Monitoring Results

The following information presents the results of the Dust Deposition Gauges (DDG), High Volume Air Sampler (HVAS) and Total Suspended Particulate (TSP) monitoring program.

4.3.5.1 Depositional Dust Gauges

Table 16: Depositional Dust Gauge Results

	Insoluble Solids (g/m^2.month)			Insoluble Solids Annual Average (g/m^2.month)		
	EPA2	EPA3	EPA4	EPA2	EPA3	EPA4
4/1/23 to 3/2/23	1.2	0.5	1.1	0.5	0.5	0.3
3/2/23 to 7/3/23	0.6	0.4	0.3	0.5	0.5	0.4
7/3/23 to 4/4/23	0.2	0.2	0.3	0.5	0.5	0.4
4/4/23 to 5/5/23	0.3	0.4	0.2	0.5	0.5	0.4
5/5/23 to 5/6/23	0.2	0.2	0.3	0.5	0.4	0.4
5/6/23 to 6/7/23	0.3	0.3	0.1	0.5	0.4	0.4
6/7/23 to 4/8/23	0.2	0.2	0.2	0.5	0.4	0.4
4/8/23 to 5/9/23	0.4	0.6	0.5	0.5	0.5	0.4
5/9/23 to 4/10/23	0.6	0.8	0.7	0.5	0.5	0.5
4/10/23 to 2/11/23	0.6	0.4	0.4	0.6	0.5	0.5
2/11/23 to 4/12/23	0.7	0.7	0.5	0.6	0.5	0.5
4/12/23 to 5/1/24	0.2	3.2	0.4	**0.5**	**0.7**	**0.4**

4.3.5.2 HVAS Unit 1 (PM10-1)

Table 17: PM10 Unit 1 Results

		Sample #	Run Date	PM10	Filter #	Date Off	Time Off	Tech	Hrs
Jan-23	PM_{10}-1	1239733012	5/01/2023	4	A0106006	9/01/2023	9:37	Client	24
	PM_{10}-1	1239733015	11/01/2023	7	A0106009	16/01/2023	9:48	Client	24.02
	PM_{10}-1	1239733018	17/01/2023	3	A0106012	20/01/2023	10:12	Client	24.02
	PM_{10}-1	1239733021	23/01/2023	11	A0106015	24/01/2023	9:43	Client	24.04
	PM_{10}-1	1239733024	29/01/2023	8	A0106018	3/02/2023	9:08	Client	24.13
Feb-23	PM_{10}-1	2239733012	4/02/2023	5	9966568	9/02/2023	8:16	Client	24.08
	PM_{10}-1	2239733015	10/02/2023	9	9966571	14/02/2023	12:17	Client	24.18
	PM_{10}-1	2239733018	16/02/2023	6	9966575	21/02/2023	11:16	Client	24.02
	PM_{10}-1	2239733021	22/02/2023	4	A0081309	23/02/2023	7:37	Client	24.05
	PM_{10}-1	2239733024	28/02/2023	6	A0081312	1/03/2023	8:49	Client	24.01
Mar-23	PM_{10}-1	3239733012	6/03/2023	11	A0081315	8/03/2023	10:10	Client	24.02

	PM_{10}-1	3239733015	12/03/2023	7	A0081318	15/03/2023	11:08	Client	24.02
	PM_{10}-1	3239733018	18/03/2023	6	A0081321	22/03/2023	7:47	Client	24.02
	PM_{10}-1	3239733021	24/03/2023	4	A0081324	28/03/2023	9:10	Client	24.01
	PM_{10}-1	3239733024	30/03/2023	4	A0081327	31/03/2023	7:59	Client	24.02
Apr-23	PM_{10}-1	4239733012	5/04/2023	7	A0081373	6/04/2023	11:40	Client	24.38
	PM_{10}-1	4239733015	11/04/2023	3	A0081376	12/04/2023	9:33	Client	24
	PM_{10}-1	4239733018	17/04/2023	3	A0081379	18/04/2023	9:05	Client	24.01
	PM_{10}-1	4239733021	23/04/2023	1	A0081382	24/04/2023	8:45	Client	24.01
	PM_{10}-1	4239733024	29/04/2023	4	A0079639	3/05/2023	8:15	Client	24.02
May-23	PM_{10}-1	5239733012	5/05/2023	5	A0079642	9/05/2023	8:41	Client	24.01
	PM_{10}-1	5239733015	11/05/2023	1	A0079645	15/05/2023	10:50	Client	24.01
	PM_{10}-1	5239733018	17/05/2023	3	A0079648	22/05/2023	8:37	Client	24.01
	PM_{10}-1	5239733021	23/05/2023	4	A0106089	26/05/2023	8:36	Client	24.02
	PM_{10}-1	5239733024	29/05/2023	1	A0106071	1/06/2023	8:06	Client	24.01
Jun-23	PM_{10}-1	6239733012	4/06/2023	5	A0081245	6/06/2023	9:00	Client	24.11
	PM_{10}-1	6239733015	10/06/2023	3	A0081223	13/06/2023	7:50	Client	24.03
	PM_{10}-1	6239733018	16/06/2023	2	A0081283	19/06/2023	10:24	Client	24.02
	PM_{10}-1	6239733021	22/06/2023	7	A0106044	26/06/2023	8:23	Client	24.12
	PM_{10}-1	6239733024	28/06/2023	2	A0106051	3/07/2023	10:39	Client	24.02
Jul-23	PM_{10}-1	7239733012	4/07/2023	1	A0079683	7/07/2023	9:44	Client	24.02
	PM_{10}-1	7239733015	10/07/2023	1	A0079686	12/07/2023	9:38	Client	24.01
	PM_{10}-1	7239733018	16/07/2023	3	A0079689	19/07/2023	9:02	Client	24.02
	PM_{10}-1	7239733021	22/07/2023	1	A0079692	24/07/2023	8:34	Client	24.01
	PM_{10}-1	7239733024	28/07/2023	5	A0079975	31/07/2023	10:09	Client	24.02
Aug-23	PM_{10}-1	8239733012	3/08/2023	7	A0079978	4/09/2023	11:52	Client	24.13
	PM_{10}-1	8239733015	9/08/2023	4	A0079981	14/09/2023	10:12	Client	24.02
	PM_{10}-1	8239733018	15/08/2023	2	A0079984	17/09/2023	7:22	Client	24.01
	PM_{10}-1	8239733021	21/08/2023	4	A0079987	24/09/2023	11:17	Client	24.01
	PM_{10}-1	8239733024	27/08/2023	6	A0079990	29/09/2023	11:32	Client	23.03
Sept-23	PM_{10}-1	9239733012	2/09/2023	3	A0106504	4/09/2023	10:52	Client	24.01
	PM_{10}-1	9239733015	8/09/2023	5	A0079654	11/09/2023	11:23	Client	24.01
	PM_{10}-1	9239733018	14/09/2023	6	A009677	19/09/2023	8:22	Client	24.02
	PM_{10}-1	9239733021	20/09/2023	10	A0079921	25/09/2023	11:25	Client	24.01
	PM_{10}-1	9239733024	26/09/2023	10	A0106501	30/09/2023	15:53	Client	24.01
Oct-23	PM_{10}-1	10239733012	2/10/2023	15	A0106590	3/10/2023	13:29	Client	24.02

	PM_{10}-1	10239733015	8/10/2023	10	A0106578	11/10/2023	12:18	Client	24.11
	PM_{10}-1	10239733018	14/10/2023	3	A0106581	17/10/2023	11:11	Client	24.03
	PM_{10}-1	10239733021	20/10/2023	15	A0106584	24/10/2023	10:56	Client	24.03
	PM_{10}-1	10239733024	26/10/2023	5	A0106587	31/10/2023	8:54	Client	24.03
Nov-23	**PM_{10}-1**	11239733012	1/11/2023	12	A0273332	6/11/2023	9:45	Client	24.01
	PM_{10}-1	11239733015	7/11/2023	7	A0273335	9/11/2023	9:46	Client	24.01
	PM_{10}-1	11239733018	13/11/2023	23	A0273338	16/11/2023	11:40	Client	24.01
	PM_{10}-1	11239733021	19/11/2023	11	A0273341	23/11/2023	8:17	Client	24.01
	PM_{10}-1	11239733024	25/11/2023	6	A0273344	28/11/2023	7:22	Client	24.01
Dec-23	**PM_{10}-1**	12239733012	1/12/2023	8	A0273379	4/12/2023	13:27	Client	24.17
	PM_{10}-1	12239733015	7/12/2023	19	A0273382	11/12/2023	10:35	Client	24.02
	PM_{10}-1	12239733018	13/12/2023	22	A0273385	15/12/2023	13:49	Client	24.02
	PM_{10}-1	12239733021	19/12/2023	65	A0273388	21/12/2023	7:21	Client	24.02
	PM_{10}-1	12239733024	25/12/2023	7	A0273391	29/12/2023	9:36	Client	24.01
	PM_{10}-1	12239733027	31/12/2023	4	A0273394	3/01/2024	7:44	Client	24.01

4.3.5.3 HVAS Unit 2 (PM10-2)

Table 18: PM10 Unit 2 Results

		Sample #	Run Date	PM10	Filter #	Date Off	Time Off	Tech	Hrs
Jan-23	**PM_{10}-2**	1239733013	5/01/2023	3	A0106007	9/01/2023	9:44	Client	24.01
	PM_{10}-2	1239733016	11/01/2023	6	A0108010	16/01/2023	9:07	Client	24.02
	PM_{10}-2	1239733019	17/01/2023	2	A0106013	20/01/2023	10:14	Client	24.02
	PM_{10}-2	1239733022	23/01/2023	7	A0106016	24/01/2023	9:08	Client	24.04
	PM_{10}-2	1239733025	29/01/2023	10	9966574	3/02/2023	9:12	Client	24.11
Feb-23	**PM_{10}-2**	2239733013	4/02/2023	6	9966569	9/02/2023	11:41	Client	24.06
	PM_{10}-2	2239733016	10/02/2023	6	9966572	14/02/2023	7:04	Client	24.02
	PM_{10}-2	2239733019	16/02/2023	9	9966576	21/02/2023	6:41	Client	24.01
	PM_{10}-2	2239733022	22/02/2023	4	A0081310	23/02/2023	6:46	Client	24.02
	PM_{10}-2	2239733025	28/02/2023	8	A0081313	1/03/2023	7:58	Client	24.01
Mar-23	**PM_{10}-2**	3239733013	6/03/2023	13	A0081316	8/03/2023	9:11	Client	24.01
	PM_{10}-2	3239733016	12/03/2023	8	A0081319	15/03/2023	10:22	Client	24.01
	PM_{10}-2	3239733019	18/03/2023	9	A0081322	22/03/2023	6:59	Client	24
	PM_{10}-2	3239733022	24/03/2023	4	A0081323	28/03/2023	8:22	Client	24.01
	PM_{10}-2	3239733025	30/03/2023	1	A0081328	31/03/2023	7:01	Client	24.01
Apr-23	**PM_{10}-2**	4239733013	5/04/2023	7	A0081374	6/04/2023	10:58	Client	24.14

	PM_{10}-2	4239733016	11/04/2023	4	A0081377	12/04/2023	7:38	Client	24.01
	PM_{10}-2	4239733019	17/04/2023	20	A0081380	18/04/2023	8:17	Client	24.01
	PM_{10}-2	4239733022	23/04/2023	1	A0081383	24/04/2023	7:59	Client	24.02
	PM_{10}-2	4239733025	29/04/2023	6	A0079640	3/05/2023	7:30	Client	24.02
May-23	PM_{10}-2	5239733013	5/05/2023	7	A0079643	9/05/2023	7:59	Client	24.01
	PM_{10}-2	5239733016	11/05/2023	2	A0079646	15/05/2023	10:09	Client	24.01
	PM_{10}-2	5239733019	17/05/2023	4	A0079649	22/05/2023	7:54	Client	24.02
	PM_{10}-2	5239733022	23/05/2023	7	9966514	26/05/2023	7:38	Client	24.02
	PM_{10}-2	5239733025	29/05/2023	2	A0106097	1/06/2023	7:05	Client	24.01
Jun-23	PM_{10}-2	6239733013	4/06/2023	2	A0081237	6/06/2023	8:17	Client	24.01
	PM_{10}-2	6239733016	10/06/2023	4	A0081290	13/06/2023	7:10	Client	24.02
	PM_{10}-2	6239733019	16/06/2023	3	A0081276	19/06/2023	9:27	Client	24.01
	PM_{10}-2	6239733022	22/06/2023	4	A0106053	26/06/2023	7:40	Client	24.01
	PM_{10}-2	6239733025	28/06/2023	2	A0106054	3/07/2023	9:59	Client	24.01
Jul-23	PM_{10}-2	7239733013	4/07/2023	1	A0079684	7/07/2023	8:52	Client	24.01
	PM_{10}-2	7239733016	10/07/2023	1	A0079687	12/07/2023	8:58	Client	24.01
	PM_{10}-2	7239733019	16/07/2023	4	A0079690	19/07/2023	7:47	Client	24.01
	PM_{10}-2	7239733022	22/07/2023	2	A0079693	24/07/2023	7:57	Client	24.02
	PM_{10}-2	7239733025	28/07/2023	3	A0079976	31/07/2023	10:09	Client	24.02
Aug-23	PM_{10}-2	8239733013	3/08/2023	8	A0079979	4/09/2023	11:15	Client	24.15
	PM_{10}-2	8239733016	9/08/2023	3	A0079982	14/09/2023	9:35	Client	24.03
	PM_{10}-2	8239733019	15/08/2023	1	A0079985	17/09/2023	6:42	Client	24.02
	PM_{10}-2	8239733022	21/08/2023	3	A0079988	24/09/2023	10:38	Client	24.03
	PM_{10}-2	8239733025	27/08/2023	7	A0079991	29/09/2023	10:46	Client	23.63
Sep-23	PM_{10}-2	9239733013	2/09/2023	4	A0106505	4/09/2023	10:12	Client	24.02
	PM_{10}-2	9239733016	8/09/2023	5	A0079667	11/09/2023	10:43	Client	24.01
	PM_{10}-2	9239733019	14/09/2023	10	A0079676	19/09/2023	7:36	Client	24
	PM_{10}-2	9239733022	20/09/2023	13	A0079911	25/09/2023	10:43	Client	24.01
	PM_{10}-2	9239733025	26/09/2023	9	A0106502	30/09/2023	15:16	Client	24.01
Oct-23	PM_{10}-2	10239733013	2/10/2023	16	A0106591	3/10/2023	12:48	Client	24.02
	PM_{10}-2	10239733016	8/10/2023	5	A0106579	11/10/2023	11:40	Client	24.17
	PM_{10}-2	10239733019	14/10/2023	6	A0106582	17/10/2023	10:28	Client	24.62
	PM_{10}-2	10239733022	20/10/2023	18	A0106585	24/10/2023	10:20	Client	24.02
	PM_{10}-2	10239733025	26/10/2023	9	A0106588	31/10/2023	8:12	Client	24.02
Nov-23	PM_{10}-2	11239733013	1/11/2023	12	A0106589	6/11/2023	9:02	Client	24.02

	PM_{10}-2	11239733016	7/11/2023	8	A0273336	9/11/2023	9:30	Client	24.01
	PM_{10}-2	11239733019	13/11/2023	22	A0273339	16/11/2023	11:24	Client	24.01
	PM_{10}-2	11239733019	19/11/2023	22	A0273339	23/11/2023	11:24	Client	24.01
	PM_{10}-2	11239733025	25/11/2023	5	A0273345	28/11/2023	7:05	Client	24.01
Dec-23	**PM_{10}-2**	12239733013	1/12/2023	9	A0273380	4/12/2023	12:51	Client	24.11
	PM_{10}-2	12239733016	7/12/2023	22	A0273383	11/12/2023	10:05	Client	24.01
	PM_{10}-2	12239733019	13/12/2023	22	A0273386	15/12/2023	13:33	Client	24.02
	PM_{10}-2	12239733022	19/12/2023	62	A0273389	21/12/2023	7:04	Client	24.01
	PM_{10}-2	12239733025	25/12/2023	8	A0273392	29/12/2023	9:15	Client	24.01
	PM_{10}-2	12239733028	31/12/2023	5	A0273395	3/01/2024	7:27	Client	24.01

4.3.5.4 TSP Unit 1

Table 19: TSP Unit 1 Results

		Sample #	Run Date	TSP	Filter #	Date Off	Time Off	Tech	Hrs
Jan-23	**TSP**	1239733011	5/01/2023	15	A0106005	9/01/2023	9:33	Client	24.02
	TSP	1239733014	11/01/2023	13	A0106008	16/01/2023	9:40	Client	24.03
	TSP	1239733017	17/01/2023	7	A0106011	20/01/2023	10:06	Client	24.03
	TSP	1239733020	23/01/2023	15	A0106014	24/01/2023	9:42	Client	24.03
	TSP	1239733023	29/01/2023	14	A0106017	3/02/2023	9:02	Client	24.17
Feb-23	**TSP**	2239733011	4/02/2023	10	9966567	9/02/2023	8:10	Client	24.07
	TSP	2239733014	10/02/2023	8	9966570	14/02/2023	12:19	Client	24.07
	TSP	2239733017	16/02/2023	13	9966573	21/02/2023	11:19	Client	24.08
	TSP	2239733020	22/02/2023	9	A0081308	23/02/2023	7:39	Client	24.01
	TSP	2239733023	28/02/2023	15	A0081311	1/03/2023	8:52	Client	24.02
Mar-23	**TSP**	3239733011	6/03/2023	27	A0081314	8/03/2023	10:12	Client	24.03
	TSP	3239733014	12/03/2023	16	A0081317	15/03/2023	11:12	Client	24.01
	TSP	3239733017	18/03/2023	18	A0081320	22/03/2023	7:59	Client	24.02
	TSP	3239733020	24/03/2023	9	A0081325	28/03/2023	9:13	Client	24.01
	TSP	3239733023	30/03/2023	9	A0081326	31/03/2023	8:03	Client	24.01
Apr-23	**TSP**	4239733011	5/04/2023	12	A0081329	6/04/2023	12:42	Client	24
	TSP	4239733014	11/04/2023	8	A0081375	12/04/2023	9:35	Client	24.02
	TSP	4239733017	17/04/2023	8	A0081378	18/04/2023	10:05	Client	24.03
	TSP	4239733020	23/04/2023	7	A0081381	24/04/2023	8:46	Client	24.02
	TSP	4239733023	29/04/2023	10	A0081384	3/05/2023	9:15	Client	24.03
May-23	**TSP**	5239733011	5/05/2023	8	A0079641	9/05/2023	8:42	Client	24.03
	TSP	5239733014	11/05/2023	6	A0079644	15/05/2023	11:50	Client	24.02
	TSP	5239733017	17/05/2023	13	A0079647	22/05/2023	8:38	Client	24.01
	TSP	5239733020	23/05/2023	10	A0079650	26/05/2023	8:39	Client	24.02
	TSP	5239733023	29/05/2023	3	A0106092	1/06/2023	8:07	Client	24.02
Jun -23	**TSP**	6239733011	4/06/2023	8	A0106068	6/06/2023	9:02	Client	24.11
	TSP	6239733014	10/06/2023	5	A0081230	13/06/2023	7:51	Client	24.02

	TSP	6239733017	16/06/2023	5	A0081265	19/06/2023	10:25	Client	24.02
	TSP	6239733020	22/06/2023	29	A0106037	26/06/2023	8:24	Client	24.01
	TSP	6239733023	28/06/2023	4	A0106061	3/07/2023	11:39	Client	24.02
Jul-23	TSP	7239733011	4/07/2023	3	9966551	7/07/2023	9:45	Client	24.01
	TSP	7239733014	10/07/2023	3	A0079685	12/07/2023	9:44	Client	24.01
	TSP	7239733017	16/07/2023	6	A0079688	19/07/2023	9:05	Client	24.02
	TSP	7239733020	22/07/2023	3	A0079691	24/07/2023	8:37	Client	24.01
	TSP	7239733023	28/07/2023	13	A0079694	31/07/2023	10:51	Client	24.02
Aug-23	TSP	8239733011	3/08/2023	13	A0079977	4/09/2023	11:58	Client	24.22
	TSP	8239733014	9/08/2023	13	A0079980	14/09/2023	10:15	Client	24.02
	TSP	8239733017	15/08/2023	3	A0079983	17/09/2023	7:25	Client	24.02
	TSP	8239733020	21/08/2023	14	A0079986	24/09/2023	11:22	Client	24.01
	TSP	8239733023	27/08/2023	11	A0079989	29/09/2023	11:36	Client	23.02
Sep-23	TSP	9239733011	2/09/2023	7	A0079992	4/09/2023	10:56	Client	24.01
	TSP	9239733014	8/09/2023	10	A0106506	11/09/2023	11:27	Client	24.02
	TSP	9239733017	14/09/2023	11	A0079912	19/09/2023	8:25	Client	24.02
	TSP	9239733020	20/09/2023	19	A0079934	25/09/2023	11:28	Client	24.02
	TSP	9239733023	26/09/2023	27	A0079925	30/09/2023	15:56	Client	24.02
Oct-23	TSP	10239733011	2/10/2023	22	A0106503	3/10/2023	13:32	Client	24.01
	TSP	10239733014	8/10/2023	5	A0106577	11/10/2023	11:50	Client	24.12
	TSP	10239733017	14/10/2023	12	A0106580	17/10/2023	11:09	Client	24.02
	TSP	10239733020	20/10/2023	21	A0106583	24/10/2023	10:54	Client	24.03
	TSP	10239733023	26/10/2023	7	A0106586	31/10/2023	8:57	Client	24.03
Nov-23	TSP	11239733011	1/11/2023	22	A0273333	6/11/2023	9:48	Client	24.02
	TSP	11239733014	7/11/2023	15	A0273334	9/11/2023	9:50	Client	24.01
	TSP	11239733017	13/11/2023	32	A0273337	16/11/2023	11:44	Client	24.02
	TSP	11239733020	19/11/2023	20	A0273340	23/11/2023	8:20	Client	24.01
	TSP	11239733023	25/11/2023	8	A0273343	28/11/2023	7:26	Client	24.01
Dec-23	TSP	12239733011	1/12/2023	18	A0273346	4/12/2023	13:30	Client	24.13
	TSP	12239733014	7/12/2023	34	A0273381	11/12/2023	10:38	Client	24.01
	TSP	12239733017	13/12/2023	39	A0273384	15/12/2023	13:52	Client	24.02
	TSP	12239733020	19/12/2023	91	A0273387	21/12/2023	7:26	Client	24.01
	TSP	12239733023	25/12/2023	12	A0273390	29/12/2023	9:39	Client	24.01
	TSP	12239733026	31/12/2023	7	A0273393	3/01/2024	7:46	Client	24.02

4.3.5.5 PM2.5 unit

Table 20: PM2.5 Results

		Sample #	Run Date	TSP	Filter #	Date Off	Time Off	Tech	Hrs
Jan-23	PM2.5	12329733026	5/01/2023	9	ARD47102201	9/01/2023	9:44	Client	24.05
	PM2.5	1239733027	11/01/2023	3	ARD47122204	16/01/2023	9:07	Client	24.05
	PM2.5	1239733028	17/01/2023	4	ARD47122206	20/01/2023	10:14	Client	24.05
	PM2.5	1239733029	23/01/2023	4	ARD47122202	24/01/2023	9:08	Client	24.05
	PM2.5	1239733030	29/01/2023	2	ARD47122205	3/02/2023	9:12	Client	24.05
Feb-23	PM2.5	22329733026	4/02/2023	3	ARD47122207	9/02/2023	11:41	Client	24.05

	PM2.5	2239733027	10/02/2023	<1	ARD47122209	14/02/2023	7:04	Client	24.05
	PM2.5	2239733028	16/02/2023	<1	ARD47122210	21/02/2023	6:41	Client	24.05
	PM2.5	2239733029	22/02/2023	<1	ARD47122203	23/02/2023	6:46	Client	24.05
	PM2.5	2239733030	28/02/2023	5	ARD47122208	1/03/2023	7:58	Client	24.05
Mar-23	PM2.5	32329733026	6/03/2023	5	ARD47022309	8/03/2023	9:11	Client	24
	PM2.5	3239733027	12/03/2023	4	ARD47022307	15/03/2023	10:02	Client	24
	PM2.5	3239733028	18/03/2023	1	ARD47022303	22/03/2023	6:59	Client	24
	PM2.5	3239733029	24/03/2023	2	ARD47022304	28/03/2023	8:22	Client	24
	PM2.5	3239733030	30/03/2023	6	ARD47022306	31/03/2023	7:01	Client	24
Apr-23	PM2.5	42329733026	5/04/2023	1	ARD47022305	6/04/2023	10:58	Client	24
	PM2.5	4239733027	11/04/2023	3	ARD47022310	12/04/2023	7:38	Client	24
	PM2.5	4239733028	17/04/2023	17	ARD47022301	18/04/2023	8:22	Client	24
	PM2.5	4239733029	23/04/2023	5	ARD47022308	24/04/2023	6:59	Client	24
	PM2.5	4239733030	29/04/2023	5	ARD47042301	3/05/2023	7:30	Client	24
May-23	PM2.5	5239733026	5/05/2023	4	ARD47042304	9/05/2023	7:59	Client	24
	PM2.5	5239733027	11/05/2023	1	ARD47042308	15/05/2023	10:09	Client	24
	PM2.5	5239733028	17/05/2023	4	ARD47042303	22/05/2023	7:54	Client	24
	PM2.5	5239733029	23/05/2023	9	ARD47022302	26/05/2023	7:38	Client	24
	PM2.5	5239733030	29/05/2023	4	ARD47042309	1/06/2023	7:05	Client	24
Jun-23	PM2.5	62329733026	4/06/2023	6	ARD47042306	6/06/2023	8:18	Client	24
	PM2.5	6239733027	10/06/2023	3	ARD47042302	13/06/2023	7:10	Client	24
	PM2.5	6239733028	16/06/2023	1	ARD47042307	19/06/2023	9:27	Client	24
	PM2.5	6239733029	22/06/2023	2	ARD47042305	26/06/2023	7:40	Client	24
	PM2.5	6239733030	28/06/2023	1	ARD47062302	3/07/2023	9:59	Client	24
Jul-23	PM2.5	72329733026	4/07/2023	2	ARD47062306	7/07/2023	8:52	Client	24
	PM2.5	7239733027	10/07/2023	5	ARD47062301	12/07/2023	8:58	Client	24
	PM2.5	7239733028	16/07/2023	1	ARD47062304	19/07/2023	7:47	Client	24
	PM2.5	7239733029	22/07/2023	3	ARD47062303	24/07/2023	7:57	Client	24
	PM2.5	7239733030	28/07/2023	1	ARD47062305	31/07/2023	10:09	Client	24
Aug-23	PM2.5	82329733026	3/08/2023	6	ARD47072305	4/09/2023	11:15	Client	24
	PM2.5	8239733027	9/08/2023	6	ARD47072301	14/09/2023	9:35	Client	24
	PM2.5	8239733028	15/08/2023	2	ARD47072303	17/09/2023	6:42	Client	24
	PM2.5	8239733029	21/08/2023	5	ARD47072302	24/09/2023	10:38	Client	24
	PM2.5	8239733030	27/08/2023	9	ARD47072304	29/09/2023	10:46	Client	24
Sep-23	PM2.5	9239733026	2/09/2023	1	ARD47082302	4/09/2023	10:12	Client	24
	PM2.5	9239733027	8/09/2023	3	ARD47082301	11/09/2023	10:43	Client	24
	PM2.5	9239733028	14/09/2023	9	ARD47082304	19/09/2023	7:36	Client	24
	PM2.5	8239733029	20/09/2023	3	ARD47082303	25/09/2023	10:43	Client	24
	PM2.5	9239733030	26/09/2023	5	ARD47062305	30/09/2023	15:16	Client	24
Oct-23	PM2.5	10239733026	2/10/2023	12	ARD47092301	3/10/2023	12:48	Client	24
	PM2.5	1039733027	8/10/2023	1	ARD47092306	11/10/2023	11:40	Client	24
	PM2.5	10239733028	14/10/2023	1	ARD47092302	17/10/2023	10:28	Client	24

	PM2.5	10239733029	20/10/2023	10	ARD47092303	24/10/2023	10:20	Client	24
	PM2.5	10239733030	26/10/2023	1	ARD47092303	31/10/2023	8:12	Client	24
Nov-23	PM2.5	11239733026	1/11/2023	6	ARD47092304	6/11/2023	9:02	Client	24
	PM2.5	1139733027	7/11/2023	4	ARD47092310	9/11/2023	9:30	Client	24
	PM2.5	11239733028	13/11/2023	13	ARD47092307	16/11/2023	11:24	Client	24
	PM2.5	11239733029	19/11/2023	6	ARD47092309	23/11/2023	8:02	Client	24
	PM2.5	11239733030	25/11/2023	1	ARD47092308	28/11/2023	7:05	Client	24
Dec-23	PM2.5	11239733029	1/12/2023	2	ARD47092312	4/12/2023	12:51	Client	24
	PM2.5	1139733030	7/12/2023	4	ARD47092311	11/12/2023	10:05	Client	24
	PM2.5	11239733031	13/12/2023	11	ARD47112308	15/12/2023	13:33	Client	24
	PM2.5	11239733032	19/12/2023	42	ARD47112305	21/12/2023	10:57	Client	24
	PM2.5	11239733033	25/12/2023	6	ARD47112312	29/12/2023	9:15	Client	24
	PM2.5	11239733034	31/12/2023	5	ARD47092303	3/01/2024	7:27	Client	24

4.3.6 Analysis of Results

Please refer to sections 4.3.6.1 to 4.3.6.4 for a breakdown of the air quality monitoring data.

4.3.6.1 Depositional Dust Gauges

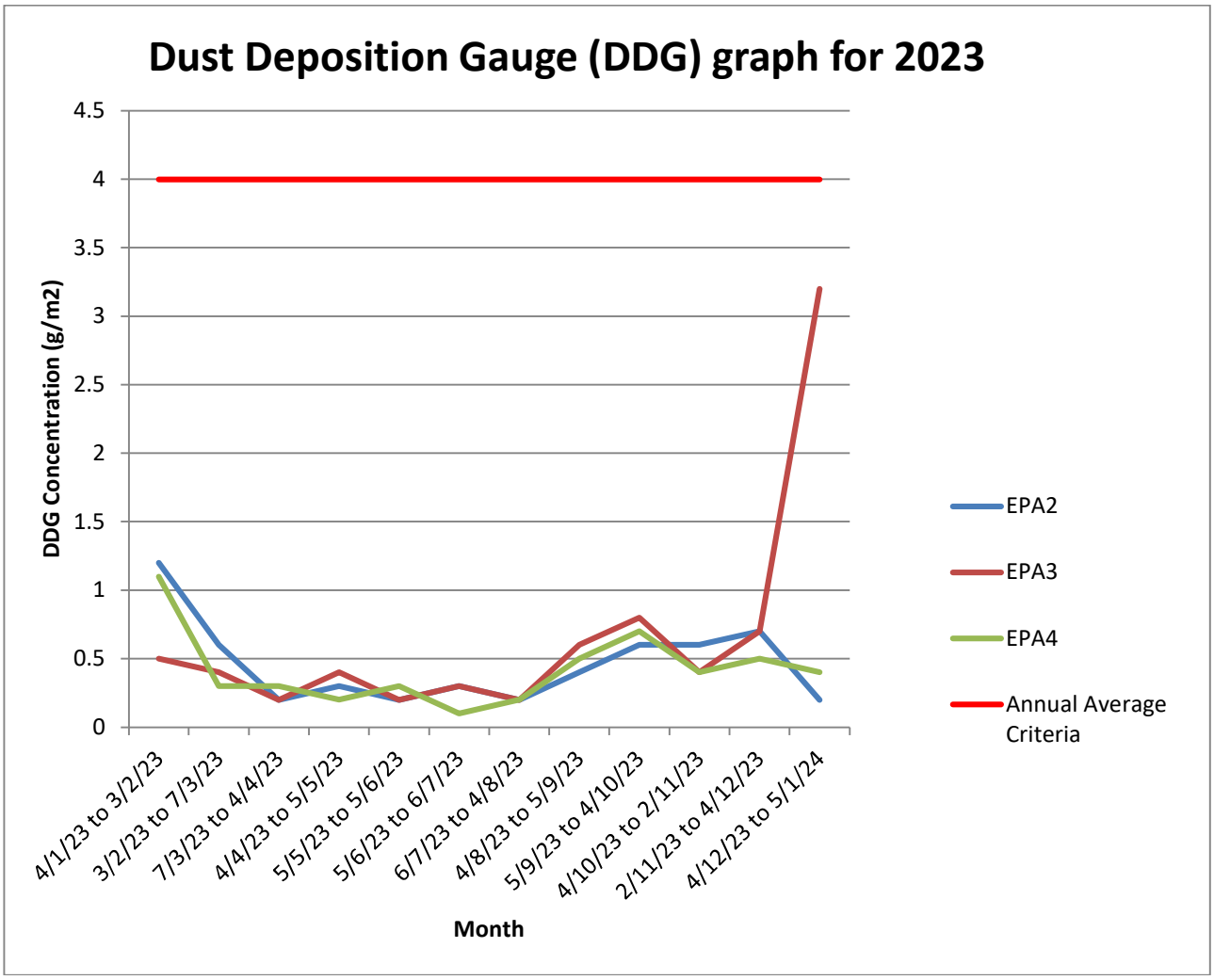


Figure 11: DDG results for the reporting period

4.3.6.2 HVAS PM-10 Unit 1 and 2

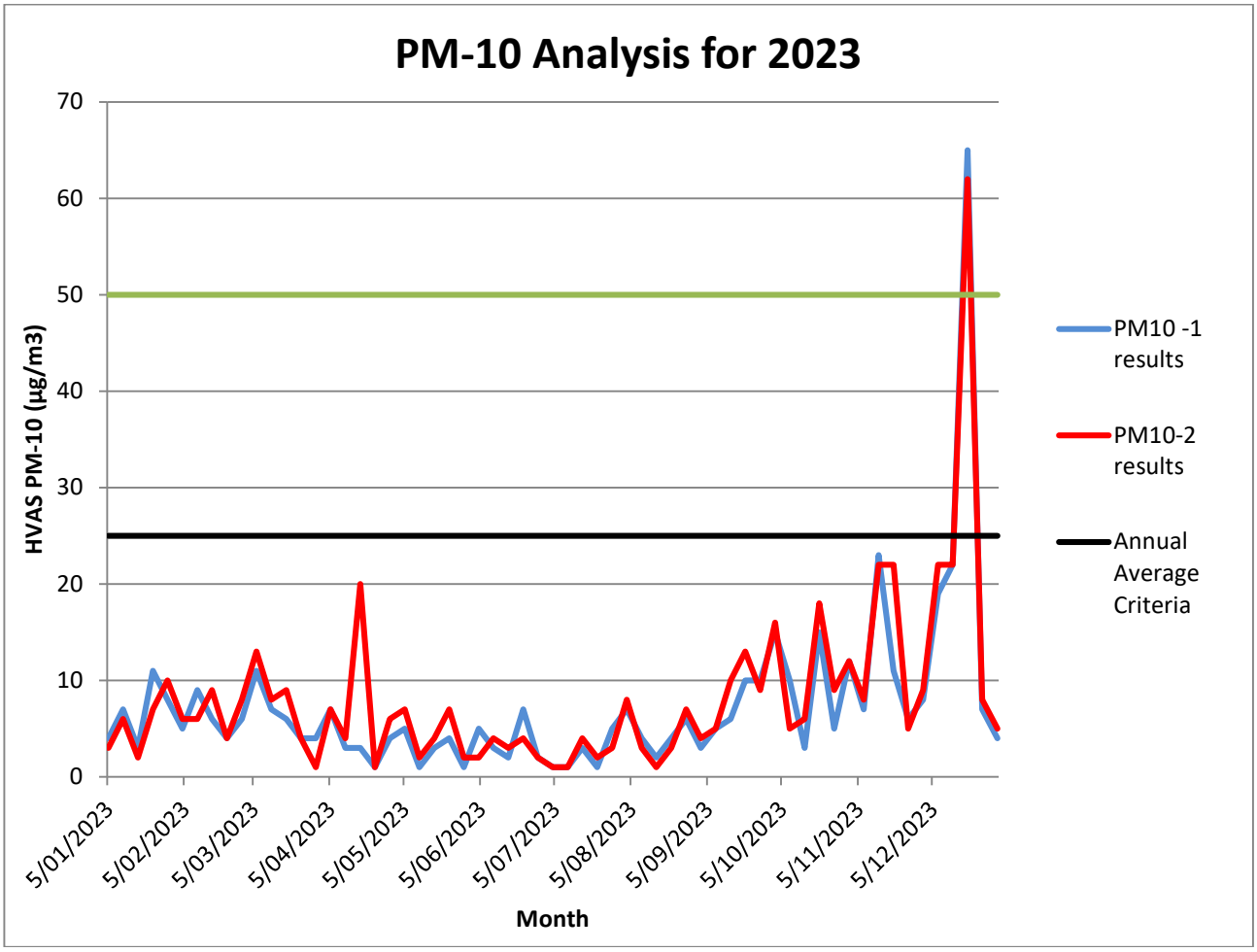


Figure 12: HVAS (PM-10) results for the reporting period

*The HVAS PM10 24-hour criterion of 25µg/m3 is based on the short-term impact assessment criterion for particulate matter. The annual average is the long-term impact assessment criteria for deposited dust as shown in Condition 15 of the Approval.

Table 21: PM10, TSP and PM2.5 annual average results for the reporting period

Unit	Annual Average results achieved	24 hour Criterion (Short Term)	Annual Average Criterion (Long Term)
PM10-1	6.4	50	25
PM10-2	7.2	50	25
TSP	12.7	N/A	90
PM2.5	4.5	25	8

4.3.6.3 TSP Unit 1

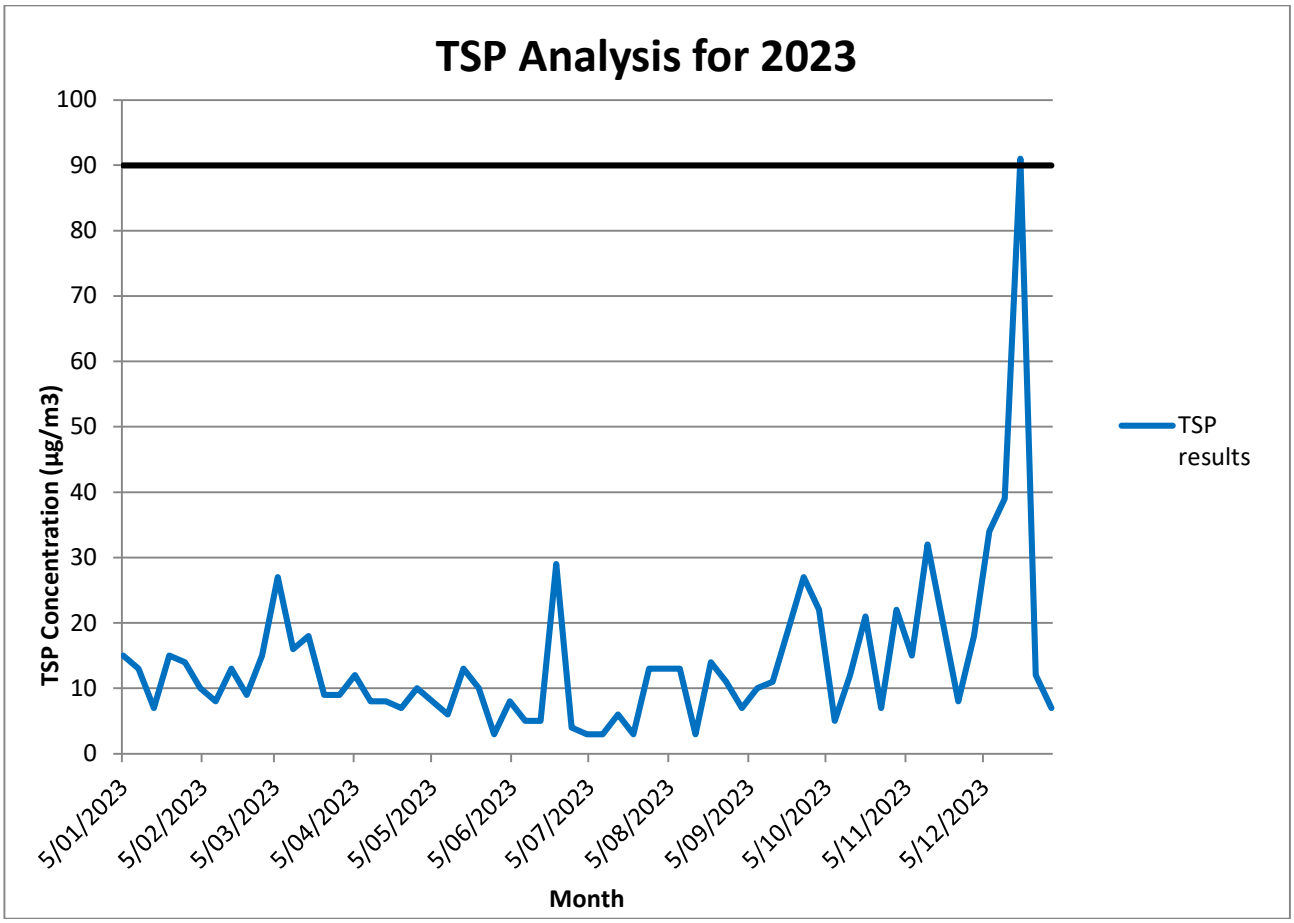


Figure 13: HVAS (TSP) results for the reporting period

4.3.6.4 PM2.5 Unit

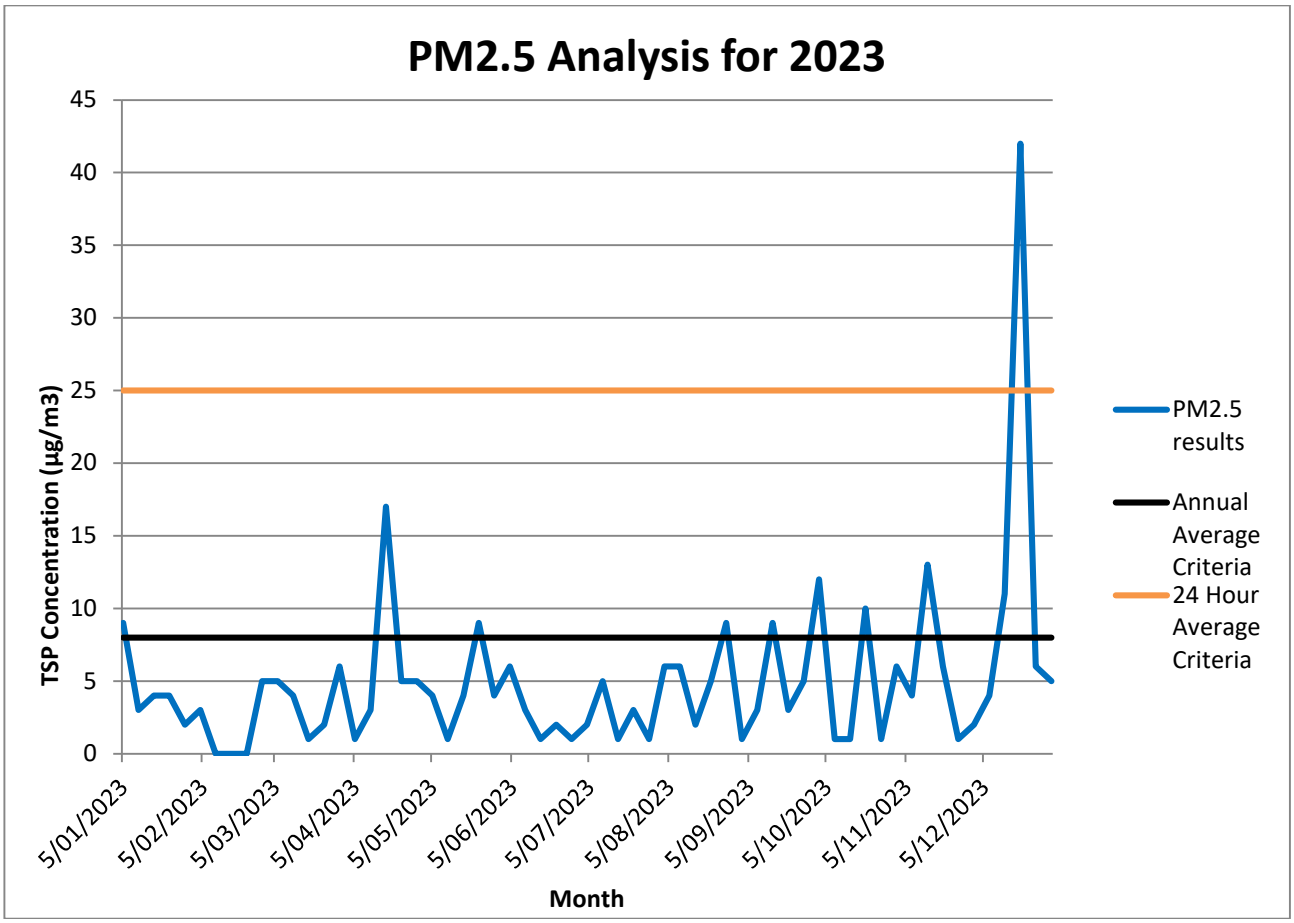


Figure 14: PM2.5 results for the reporting period

4.3.7 Discussion

Commentary on the various air monitoring data is below:

DDG

All DDG's were compliant based on the annual average and individual results achieved during the reporting period.

HVAS and LVAS (PM10, TSP and PM2.5)

The PM10 and TSP units operated as required for the entire duration of the reporting period. The PM2.5 unit was installed in late March 2022 and operated appropriately from that time until the end of the current reporting period.

All PM10, TSP and PM2.5 monitoring results obtained were compliant based on the annual average results achieved during the reporting period.

There was one '24 hour' air quality result that exceeded the criteria on the 19th December 2023 and was therefore non-complaint. This was reported to DPHI and formally accepted by DPHI correspondence on the 20th February 2024.

4.3.8 Conclusion

All DDG, PM-10, TSP and PM2.5 results obtained during the reporting period were compliant apart from one result for the PM10's, TSP and PM2.5 on the 19th December 2023. The investigation associated with the air quality non-conformances identified on the 19th December 2023, demonstrated the poor air quality was not associated with the operation of Ardglen quarry but came

from an inland bush fire and strong north westerly winds. This was reported to DPHI and formally accepted by DPHI correspondence on the 20th February 2024.

The erroneous air quality results obtained for the 19th December 2023 have also been removed from the annual averages as noted in the DPHI correspondence. The annual average results shown in **Table 21** therefore do not include the results for the 19th December 2023.

4.4 Flora and Fauna Habitat

4.4.1 Introduction

As part of the current consent, the three Biodiversity Offset Areas (BOA's) have been established as described in the off-set strategy. Please refer to Section 2.12 for further details of this ongoing process.

From a fauna perspective, nesting boxes were installed in April 2012 on Lot 187 DP 751028 as identified in the sites Landscape Management Plan. It is a requirement of the plan that annual inspections of the nesting boxes are conducted for the life of the quarry, and this occurred again during the reporting period. Please refer to **Appendix 6** for a copy of the 2023 Ardglen Annual Biodiversity Monitoring report.

4.4.2 Fauna Management

Appropriate feral animal control is an important aspect of the correct management of the site. Feral animal control is therefore ongoing and completed on the site (including offset areas) as required. Once again, this occurred for the entire duration of the reporting period with records kept of feral animals controlled during that time. A summary of the vermin removed from site during the reporting period is contained within the 2023 Ardglen Annual Biodiversity Monitoring report included as **Appendix 6** to this report.

4.4.3 Nest Box Usage

The report associated with the annual inspections of the nesting boxes is attached in **Appendix 6**. Photo 3 below also demonstrates nest box usage as detailed within the 2023 Rehabilitation and nesting inspection report.

4.4.4 Biodiversity offset and rehabilitation areas

The full report associated with the 2023 Rehabilitation and nesting inspection report is attached in **Appendix 6**. A summary of this report is shown in section A, B and C below.

A. <u>BOA inspection (and offset planting)</u>

Four permanent monitoring plots (Q01, Q02, Q03 and Q04) were established within each of the four vegetation zones in the BOAs identified by Orogen (2010). These vegetation zones have been assigned a Plant Community Type (PCT) in order to be comparable with PCT benchmarks and track condition and progress over time. These PCTs have been described using floristic data, broad-scale vegetation mapping (DPHI 2020) and using knowledge of the local topography and landscape.

Table 22 shows the vegetation zones and corresponding PCT associated with each of the four monitoring plots used.

Table 22: Vegetation Zones and Corresponding PCT and Plot Information

Plot Name	Easting	Northing	Zone	Vegetation Zone (Orogen 2010)	PCT Name
Q01	290019	6485647	56	Blakelys Red Gum (+/- Yellow Box) Dry Sclerophyll Grassy Woodlands/Open Woodland	PCT 496 - Yellow Box - White Box - Silvertop Stringybark - Blakely's Red Gum grass shrub woodland mainly on the Liverpool Range, Brigalow Belt South Bioregion
Q02	289747	6486167	56	River Oak (*Casuarina cunninghamiana*) Dry Sclerophyll Woodland	PCT 485 - River Oak riparian grassy tall woodland of the western Hunter Valley (Brigalow Belt South Bioregion and Sydney Basin Bioregion)
Q03	289761	6485921	56	White Box (*Eucalyptus albens*) and Rough barked Apple (*Angophora floribunda*) Dry Sclerophyll Grassy Woodland	PCT 433 - White Box grassy woodland to open woodland on basalt flats and rises in the Liverpool Plains sub-region, Brigalow Belt South Bioregion
Q04	289144	6486073	56	Derived Native Grassland	PCT 796 - Derived grassland of the NSW South Western Slopes

A comparison of the data collected at each of the monitoring sites to the previous year's results and their corresponding PCT benchmarks is outlined below:

Q01 - PCT 496 - Yellow Box - White Box - Silvertop Stringybark - Blakely's Red Gum grass shrub woodland mainly on the Liverpool Range, Brigalow Belt South Bioregion. Native species richness at this site has increased and is currently at 54% of the benchmark; a 22% increase from 2022. Overstorey foliage cover was stable this year, remaining at 27% of the benchmark. Mid-storey foliage cover remained at nil. Native grass cover had a significant increase, and well exceeded the benchmark. Exotic cover has decreased significantly, potentially due to die off, of species which favoured the wet climatic conditions of the prior La- Niña period, and competition with better adapted native grasses. Native forbs and "other" decreased this year and are currently below the benchmark. Fallen log cover dropped this year and this is likely a function of either low visibility due to the thick ground cover or decomposition due to high levels of rainfall the previous three years. Regeneration of canopy species was evident in this plot.

Q02 - PCT 485 - River Oak riparian grassy tall woodland of the western Hunter Valley (Brigalow Belt South Bioregion and Sydney Basin Bioregion). Native species richness had a slight increase at this site, now meeting 21% of the benchmark. Overstorey cover increased slightly, now sitting at 62% of the benchmark. Mid-storey foliage cover marginally decreased to now sit at 10% of the benchmark. The increase in native grass and forb cover seen in the previous year has not continued, now sitting at 34% and 0% of the benchmark respectively.. This is reflected in the 18% increase of exotic species observed on the site. Fallen logs were not observed on the site, but may be a reflection of the tall exotic grass cover obscuring visibility. Regeneration of canopy species again has not been observed in this area.

Q03 - PCT 433 - White Box grassy woodland to open woodland on basalt flats and rises in the Liverpool Plains sub-region, Brigalow Belt South Bioregion. Native species richness increased slightly since 2022, and now is sitting at 48% of the benchmark. Overstorey foliage cover has also increased, now reflecting the benchmark score of 18%. The mid-storey foliage cover has remained stable, remaining at nil since the year prior. Native grass cover had a significant increase, and well exceeded the benchmark. Exotic cover has decreased significantly, potentially due to dieback of species which favoured the wet climatic conditions of the prior La- Niña period, and competition with better adapted native grasses. Native forbs and "other" decreased this year and are currently sitting at nil. Overstorey regeneration was observed in this plot, and fallen logs remained absent.

Q04 - PCT 796 - Derived grassland of the NSW Southwestern Slopes. Native species richness increased marginally since last year's monitoring period, currently sitting at 71% of the benchmark.

Native overstorey and mid-storey cover were appropriately absent, as were fallen logs. At this site we saw the same trend as in Q01 and Q03, whereby native grass cover has significantly increased to 90% of the benchmark, and forb and exotic cover has significantly declined, likely a result of native grasses outcompeting them in the increasingly dry conditions.

Approximately 447 tubestock were planted within Offset A and Offset B in 2021 in the indicative planting areas shown in **Figure 5**. Older offset supplementary plantings were made in Autumn 2021, with recent plantings made in Spring 2021. 75% Heights ranged from 0.5 -2 m. Condition and survivorship of these plantings was good with approximately 75% of plantings surviving. As with previous years, most of the losses encountered appeared to have been contributed to by destructive behaviour by feral pigs and deer, which has also resulted in damage to tree guards. Some saplings have been bent by fallen guards and are growing horizontally along the ground. In some cases, weeds and high grass are competing with saplings for space, however, more established saplings were observed to high survivorship amongst high coverage of St John's Wort.

B. Rehabilitation planting inspection

Approximately 500 saplings were planted in the two rehabilitation areas outside of the BOAs and identified in the indicative planting areas in **Figure 5**. Two areas were planted within the quarry boundary. The Western Rehabilitation plantings were undertaken in September 2019 along with the lower/eastern plantings in the and the Southern Rehabilitation area. The top/western portion of this area was planted in March/April 2020.

Both areas continued to show a high survival rate, and although the count of saplings was not exhaustive, only a small number of planted individuals appeared to have perished. Survival rate appeared to be above 75% in both areas. Though some species could not be identified due to their young age, the species mix appeared to be a satisfactory mix of representative canopy and mid-storey species for the area.

In the Western Rehabilitation plantings, the plant guards seemed mostly intact, with most of the damage likely cause by feral animal interference occurring on the southern side of the slope near R01. Pickets and barriers were observed to have fallen over or snapped/rotted at the point where they contacted the ground. In some cases the fallen barriers were bending living plantings so that they were growing horizontally along the ground. Plant heights ranged from 0.2 to 2.7 metres in height, which indicated a small increase from the 2022 monitoring period. Given the timing of plantings in this area in the height of intense drought, the survival rate and condition of these plantings is very high. Many of the successful older plantings have reached a size where they are being constricted by their surrounding tree guards, and these should be removed for their continual growth and safety (Photo 4.8). The plantings within the Southern Rehabilitation area have not had the same rate of success as those within the Western Rehabilitation area. This is likely a function of the exposed and sloped nature of the site resulting in lower soil moisture and soil retention. Tree guards showed less signs of feral animal interference, with many still standing despite the enclosed tree not surviving. Planting that have survived are in a generally healthy condition, and were observed to be at an average height of 0.4m, with a small number of individuals reaching a height of around 1 metre. Plantings in this area are not yet mature enough to have their tree guards removed. Survivorship was good at both sites, with natural regeneration of the shrub layer boosting success.

C. Recommendations from the Rehabilitation and Nesting Inspection Report

Additionally, as also detailed in the 2023 Rehabilitation and nesting inspection report (**Appendix 6**), the following recommendations (including proposed actions in red) are provided for consideration in the 2022 Annual Review:

• Perimeter fencing of the BOAs is adequate, but internal fences can be removed if practical. These may hinder the movement of native fauna throughout the BOAs. It is noted that this issue will be resolved once the Conservation Agreement (CA) is approved by the BCT – Once the CA is approved by BCT, the removal of redundant internal fences in the BOA's will occur soon thereafter;

• Daracon should continue to engage the services of a feral animal shooter for feral pest animals that frequent the BOAs (e.g., foxes and wild dogs). Daracon may liaise with Local Land Services to discuss the merits of a wild dog baiting program if considered necessary – Daracon continues to engage the services of a feral animal shooter and will continue to do so for the foreseeable future;

• Weed infestations have increased across all Offset sites. This included the spread of species into areas that they had not been recorded in within past monitoring events. Further and ongoing weed management of St John's wort (Hypericum perforatum) and Blackberry (Rubus fruticosus agg.) is recommended in all offsets. It is suggested that the two small patched of prickly pear (Opuntia stricta) observed within Offset A and Offset C are additionally targeted while the infestation is minimal, as this species is likely to thrive as climatic conditions continue to move towards drought.– There have been multiple weed spraying events on site during the reporting period, however the weed management strategy will improve once BCT approve the CA;
• It is noted that track access had impeded progress in pest and weed management during the 2021 and 2022 management period. Track improvements have been made along the steep hill leading away from the operational areas of the quarry. It is recommended that Daracon continues to make progress with these track upgrades where necessary to allow for services to access offsets. Pest and weed activity is high such that the condition of the offsets will worsen considerably if these issues are not attended to - Daracon continue to maintain access tracks outside the BOA's and will continue to do so for the foreseeable future. Additionally, once the CA is approved by BCT, the access tracks in the BOA's will also improve;
• In the Western rehabilitation area, it is recommended that tree guards be removed from any Eucalypt plantings greater than 2m to ensure their ongoing growth and safety – Daracon has removed the tree guards from any plantings greater than 2m in the western rehabilitation area;

Photo 3: Nest box usage

4.5 Greenhouse Gas

4.5.1 Introduction

As part of the current consent, we need to monitor and report the gas emissions generated by the project.

4.5.2 Reporting

Due to the fact that there is no permanent electrical power connected to the site and there has been no machinery used on site during the reporting period, the greenhouse gas emissions for the site are negligible and well below any official reporting thresholds.

4.6 Analysis of monitoring results against those predicted in the EA

4.6.1 Water Quality

Due to the fact that the quarry has mostly been in "care and maintenance" for many years, the fact that the site has substantial water storage capacity on site, there have been no documented water discharge events or known water quality issues identified. This is consistent with those predicted in the EA which states "the project is unlikely to result in any significant impacts on water".

4.6.2 Noise and Blast

Due to the fact that the quarry has mostly been in "care and maintenance" for many years and the fact that the site has not undertaken blasting or significant quarrying operations during this time, there have been no issues relating to noise or blasting identified. We are yet to fully implement all mitigation measures detailed in the EA as we have not yet entered the extension area. Upon entering the extension area, the various additional mitigation measures will be implemented and monitored in accordance with the consent.

4.6.3 Air Quality

Due to the fact that the quarry has mostly been in 'care and maintenance' for many years and the fact that the site has not undertaken blasting or significant quarrying operations during this time, there have been no substantial issues relating to air quality identified. There have obviously been a few (but infrequent) air quality monitoring results that have not complied with the consent during previous reporting periods, however these have easily been discounted for reasons not specifically associated with quarry operations (regional dust storms or persistent intense drought conditions). This is consistent with those predicted in the EA which states "air quality modelling indicates that worst case dust emissions generated by the project would comply with the DECC criteria for dust deposition, TSP and small particulate matter (PM-10) at all privately owned residences in the vicinity of the site".

4.7 Trends of monitoring over the life of the project

4.7.1 Water Quality

Due to the fact that the quarry has mostly been in 'care and maintenance' for many years, the fact that the site has substantial water storage capacity on site there have been no documented water discharge events or known water quality issues identified. It must be noted however that the Approval includes additional water management strategies to permit appropriate water discharge subject to approval of a variation to the EPL.

4.7.2 Noise and Blast

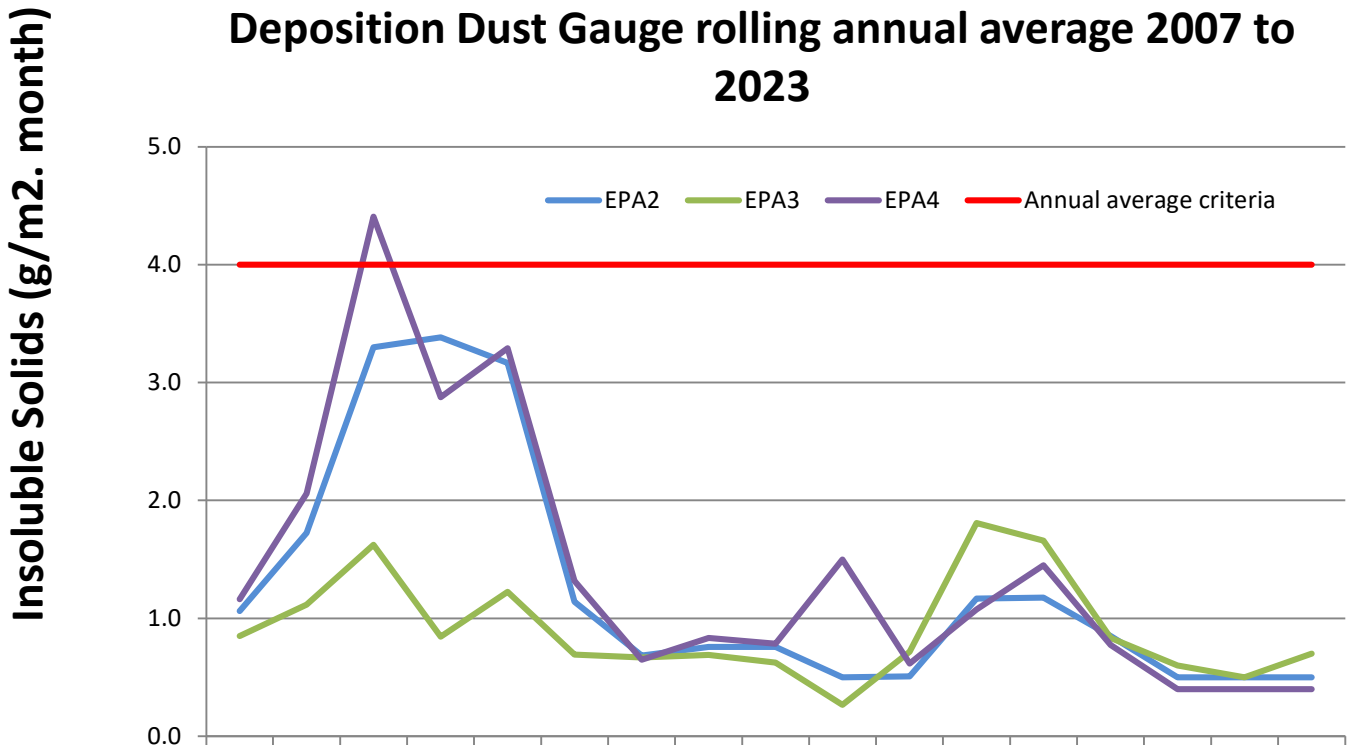
Due to the fact that the quarry has mostly been in 'care and maintenance' for many years and the fact that the site has not undertaken blasting or significant quarrying operations during this time, there have been no issues relating to noise or blasting identified. It must be noted however that the Approval includes additional noise mitigation measures that will be implemented and monitored in accordance with the consent.

4.7.3 Air Quality

Due to the fact that the quarry has mostly been in 'care and maintenance' for many years and the fact that the site has not undertaken blasting or significant quarrying operations during this time, there have been no substantial issues relating to air quality identified.

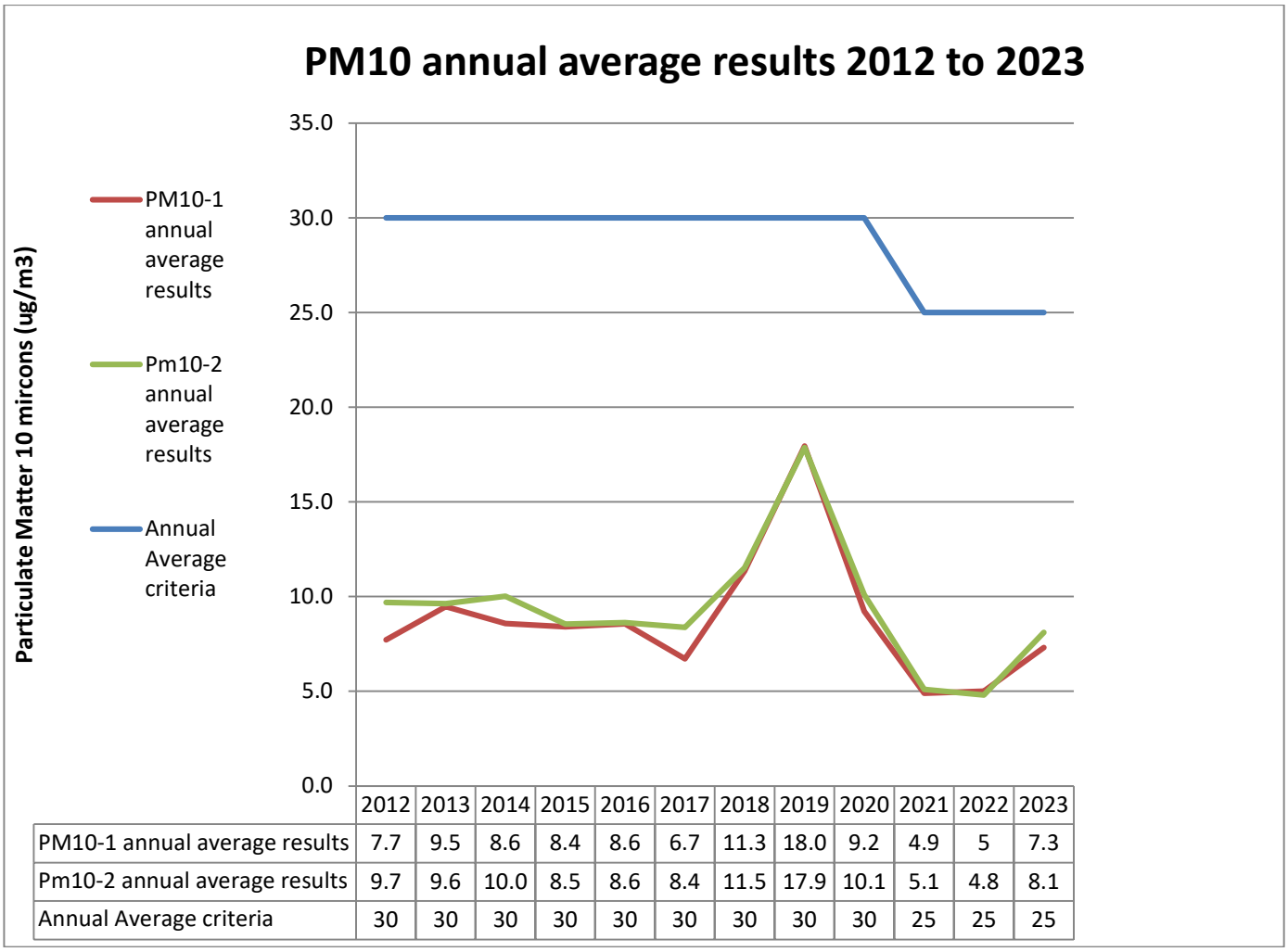
As shown in **Figures 15, 16, 17** and **18** below, the long-term trends associated with the various air quality monitoring parameters are summarised as follows:

- **Figure 15** – This shows the Dust Deposition Gauge (DDG) monitoring results from 2007 to 2023. As seen in this figure, the annual average results are all below the criterion apart from the average result for EPA #4 from 2009;
- **Figure 16** – This shows the HVAS PM10 "annual average" monitoring results from 2012 to 2023. As seen in this figure, the annual average results are all below the criterion;
- **Figure 17** – This shows the HVAS PM-10 "24 hour" monitoring results from 2012 to 2023. As seen in this figure, the annual average results are all below the criterion apart from the results obtained in 2012 and more recently during late 2018, late 2021 into early 2020 and the result obtained for the 19th December 2023. For clarification regarding the prevailing weather conditions during this reporting period, please see also see below **Figure 20** (taken from the biodiversity monitoring report) which demonstrates that the region surrounding Ardglen quarry was experiencing 'non drought' conditions for most of the reporting period apart from the latter part of the year;
- **Figure 18** – This shows the HVAS TSP monitoring results from 2012 to 2023. As seen in this figure, the TSP results are all below the criterion apart from the results obtained during late 2018, late 2019 into early 2020 and the result obtained for the 19th December 2023. For clarification regarding the prevailing weather conditions during this reporting period, please see also see below **Figure 20** (taken from the biodiversity monitoring report) which demonstrates that the region surrounding Ardglen quarry was experiencing 'non drought' conditions for most of the reporting period apart from the latter part of the year;
- **Figure 19** – This shows the PM2.5 monitoring results from 2022 to 2023. As seen in this figure, all results obtained are well below the 24 hour criteria apart from the result obtained for the 19th December 2023;
- Additionally, as mentioned previously in this report, the elevated air quality results obtained for the 19th December 2023 have been **excluded from annual averaging calculations**, as per Note c of Schedule 3 condition 15 of the consent and noted by DPHI in their correspondence dated 20th February 2024.



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
EPA2	1.1	1.7	3.3	3.4	3.2	1.1	0.7	0.8	0.8	0.5	0.5	1.2	1.2	0.9	0.5	0.5	0.5
EPA3	0.9	1.1	1.6	0.8	1.2	0.7	0.7	0.7	0.6	0.3	0.7	1.8	1.7	0.8	0.6	0.5	0.7
EPA4	1.2	2.1	4.4	2.9	3.3	1.3	0.7	0.8	0.8	1.5	0.6	1.1	1.5	0.8	0.4	0.4	0.4
Annual average criteria	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4

Figure 15: DDG rolling averages from 2007 to 2023



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
PM10-1 annual average results	7.7	9.5	8.6	8.4	8.6	6.7	11.3	18.0	9.2	4.9	5	7.3
Pm10-2 annual average results	9.7	9.6	10.0	8.5	8.6	8.4	11.5	17.9	10.1	5.1	4.8	8.1
Annual Average criteria	30	30	30	30	30	30	30	30	30	25	25	25

Figure 16: Annual average PM-10 results from 2012 to 2023

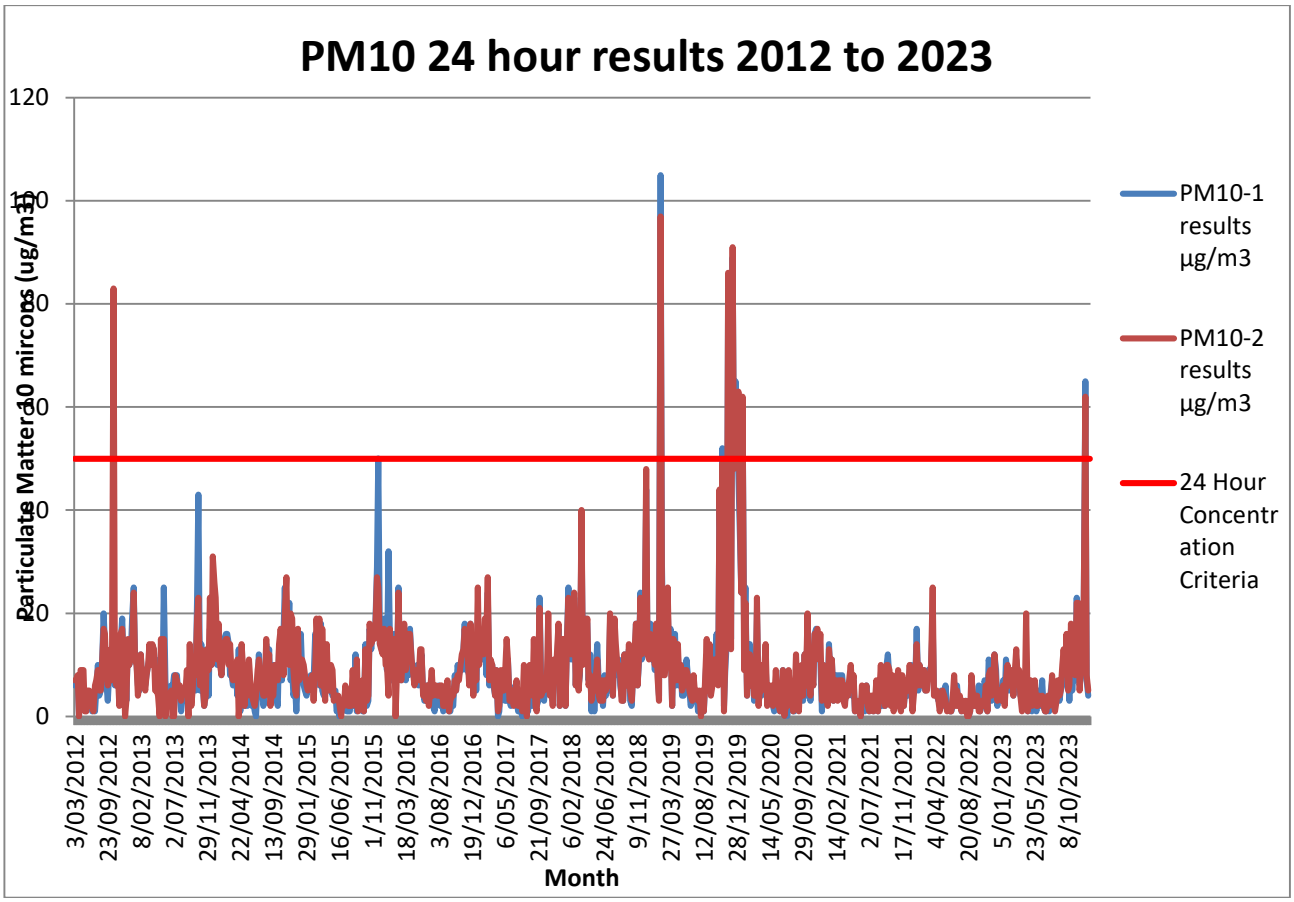


Figure 17: Twenty-four-hour concentration PM-10 results from 2012 to 2023

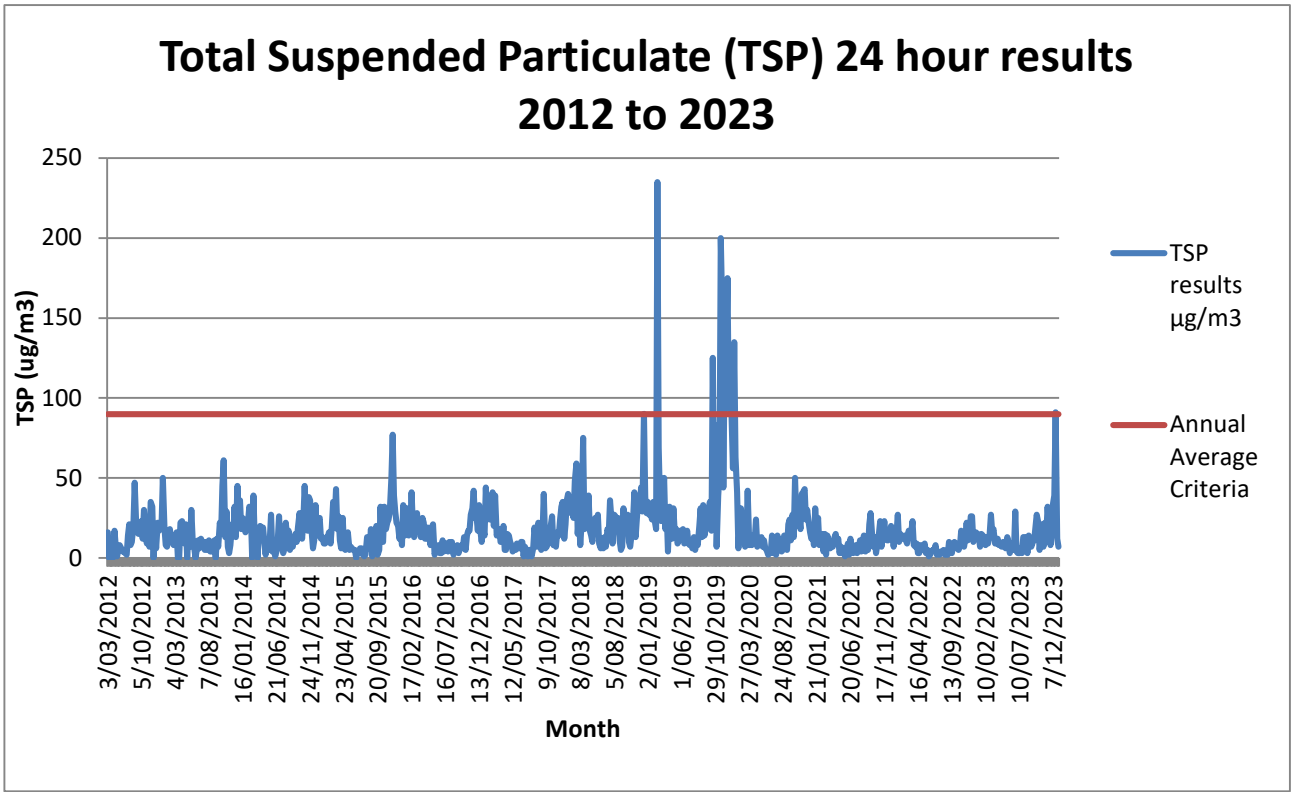


Figure 18: Annual average TSP results from 2012 to 2023

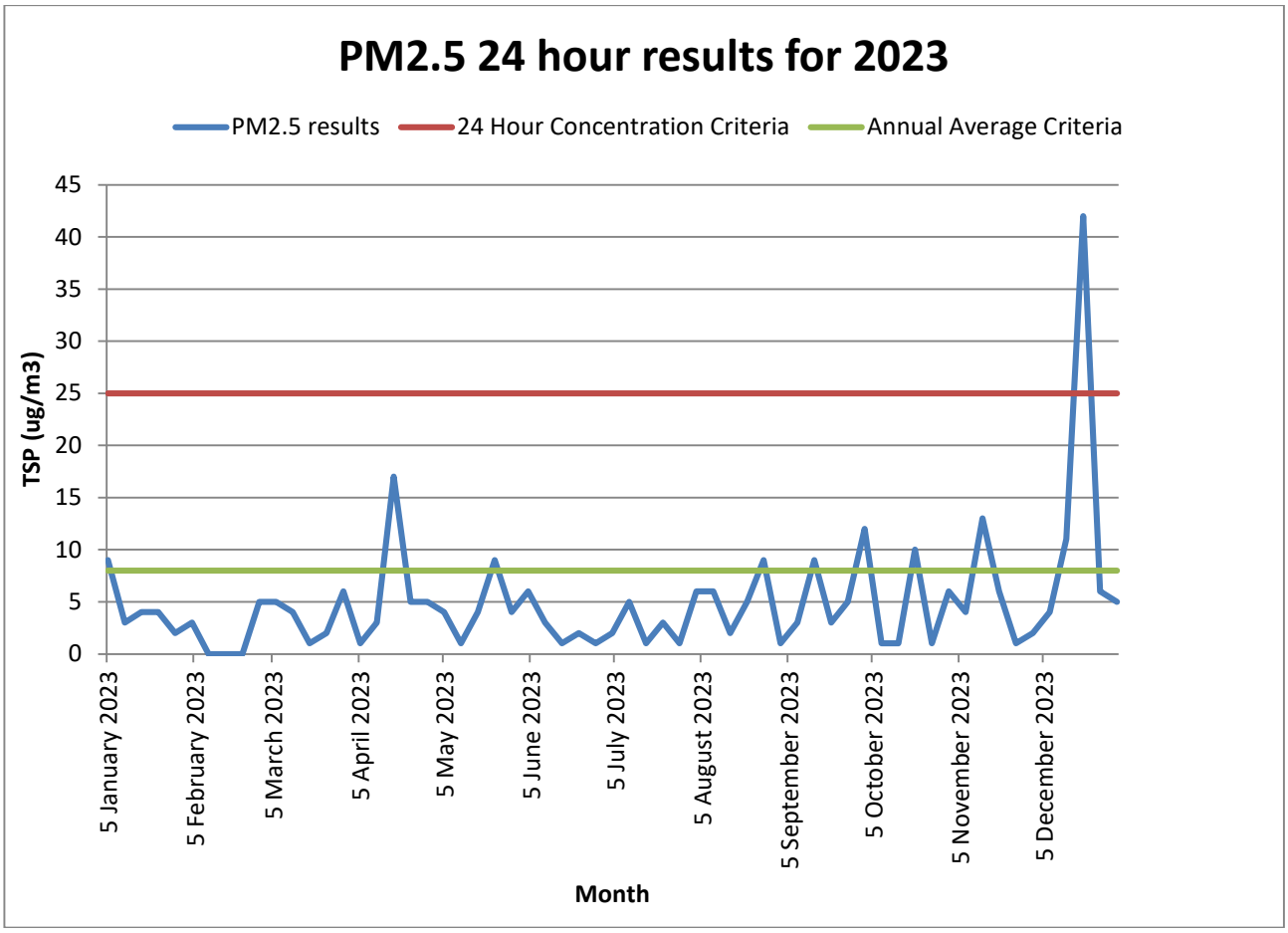


Figure 19: PM2.5 results for 2023

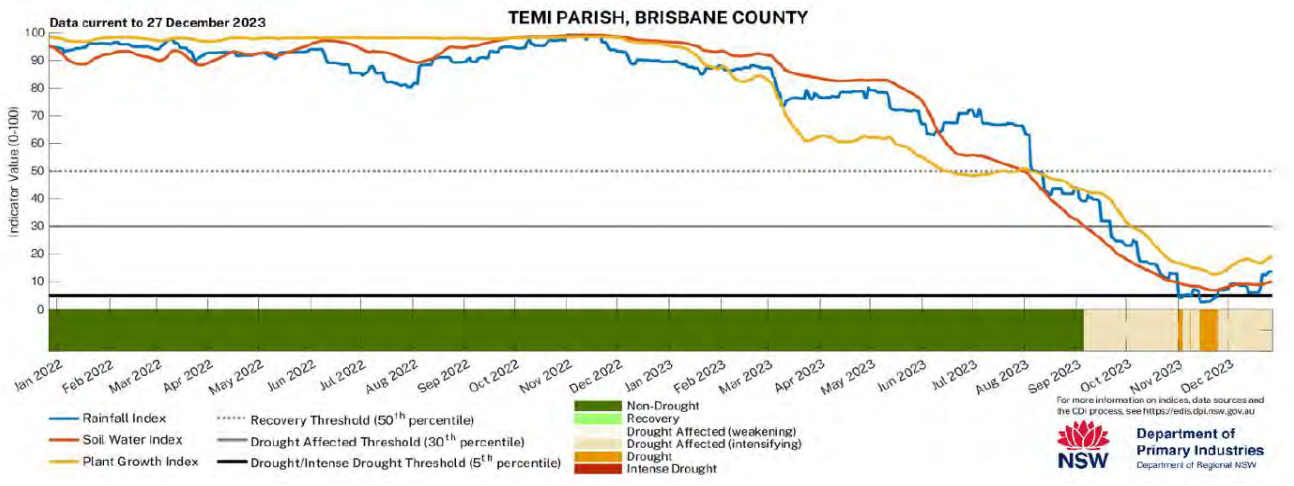


Figure 20: DPHI 'Combined Drought Indicator' taken from Biodiversity monitoring report (Appendix 6)

5. COMPLIANCE ASSESSMENT

5.1 Environmental Protection Licence

Daracon hold Environmental protection Licence 1115 for a 'land based' extractive industry. The licence has an anniversary date of 1 January. The annual return covering the reporting period identified no non-compliances with the conditions of the licence and was submitted to the EPA in

February 2023. The current version of the Ardglen Quarry Environment Protection Licence (EPL 1115) is available on site.

Daracon also received approval for a variation to the EPL to accommodate the requirements of Mod 2. This was approved by the EPA during 2022.

5.2 Discrepancies With Predicted and Actual Quarry Operations

The previous AEMR included a list of various activities planned for the following reporting period. With regard to the actual activities undertaken on site during the reporting period, the discrepancies between those predicted and those undertaken are summarised below:

- The security of the offset areas associated with the quarry extension approval continues to take longer than expected, however we're continuing to work closely with the Biodiversity Conservation Trust to enable the completion of a Conservation Agreement which will be resolved before entering the Extension Area in accordance with Mod 2;
- The Umwelt rehabilitation inspection report included in **Appendix 6** of this document includes the most recent update we received from BCT in early 2023;

5.3 Independent Audit

During 2022, Daracon engaged the services of an environmental auditor to undertake the Independent Environmental Audit (IEA) in accordance with the Project Approval MP 06_0624 MOD 2. A copy of the IEA report and Response to Audit Recommendations were provided to DPHI and accepted in December 2022. Please also refer to **Table 3** for a summary of the non-compliances arising from the 2022 IEA including the current status of each. **Table 3** shows the outstanding items from the 2022 IEA are mostly now resolved.

5.4 Summary of Incidents and Non-Compliances

Table 23 includes a summary of the incidents and non-compliances raised by Daracon during the reporting period. Please also refer to **Appendix 4** for a summary of complaints received and **Table 3** for a summary of the non-compliances arising from the IEA undertaken by Pitt and Sherry in 2022.

Table 23: Summary of incidents and non-compliances raised during the reporting period

Date occurred	Description	Outcome / action	Closed (Y / N)
19th December	Exceedance of the air quality monitoring criteria for TSP, PM10 and PM2.5	A regional air quality event that was not associated with the quarry operation adversely impacted the air quality results. This was formally acknowledged and accepted by DPHI	Y

6. ACTIVITIES PROPOSED DURING THE NEXT REPORTING PERIOD

6.1 Introduction

The following section provides a brief summary of operational & non-operational activities planned throughout the 2023 reporting period. **Table 24** provides a summary of the proposed quarry activities.

Table 24: Proposed Activities for 2023

January - December 2023	• Ongoing review, update and submission of Management Plans as required; • Ongoing monthly noise monitoring once quarrying operations recommence; • Regular Site Inspections; • Ongoing Air Quality Monitoring; • Attend to the revised conditions associated with Mod 2, with a view to recommencing quarrying activities (overburden removal, blasting and crushing); • Ongoing site rehabilitation work as required; • Progress the security of the BOA's with BCT; • Preparatory and construction works to facilitate the recommencement of quarrying activities; • Recommencement of quarrying activities, subject to the completion of the various tasks within the Approval that are required 'before entering the extension area';

6.2 Extraction Operations from the 'Extension Area'

Subject to the completion of the various tasks within the Approval that are required 'before entering the extension area', extraction operations from the 'Extension Area' should recommence during the next reporting period (2024).

6.3 Processing of material from the 'Extension Area'

Subject to the completion of the various tasks within the Approval that are required 'before entering the extension area', processing of material from the 'Extension Area' should recommence during the next reporting period (2024).

6.4 Overburden And Silt Management

Subject to the completion of the various tasks within the Approval that are required 'before entering the extension area', overburden removal from the 'Extension Area' should recommence during the next reporting period (2024).

6.5 Waste Management

Subject to the completion of the various tasks within the Approval that are required 'before entering the extension area', additional waste management processes may be implemented during the next reporting period (2024).

6.6 Site Infrastructure and Services

In accordance with the revised Approval and updated EPL, changes are likely to occur to the site infrastructure and services during the next reporting period such as additional noise mitigation and water management structures. The reconnection of services to the site offices may also occur during the next reporting period (2024).

6.7 Water Management

In accordance with the revised Approval and updated EPL, changes are likely to be made to the current water management practices during the next reporting period (2024).

Progression of the Groundwater study in accordance with the Approval.

6.8 Bushfire Management

Bush fire management practices will remain in place and monitored.

6.9 Hazardous Materials Management

There will be no importation or disposing of hazardous materials on site. Subject to the completion of the various tasks within the Approval that are required 'before entering the extension area', changes may be made to the management practices associated with hazardous materials during the next reporting period (2024).

6.10 Product Transportation

Truck movements in accordance with Mod 2 will continue to facilitate the export of material contained within the existing stockpiles.

The export of material sourced from the 'extension area' should also recommence during 2024.

6.11 Rehabilitation and landscape management

During the next reporting period it is likely that the following rehabilitation and landscape management activities will occur:

- Subject to the advice received from the BCT, Daracon may revise the Landscape Management Plan (LMP) again with assistance from Umwelt and submit to the DPHI for review and approval;
- Inspection and maintenance of rehabilitation planting in areas identified in the LMP as required;
- Monitoring of BOA's will be conducted on a regular basis;
- Long term security of the off-set areas to be resolved;
- Implement the various management strategies as detailed in the consent and revised LMP prior to entering the extension area;
- Implement the Doughboy Hollow Rehabilitation strategy;

7. REFERENCES

1. ANZECC (2000) – Australian and New Zealand Guidelines Fresh and Marine Water Quality
2. DEC (2007) Approved Methods for Sampling of Air Pollutants in New South Wales
3. DECCW (2007) Methods for the Sampling and Analysis of Air Pollutants in New South Wales
4. EPA (2000) New South Wales Industrial Noise Policy
5. DPHI (2015) Annual Review Guideline

8. APPENDICES

Appendix 1 Project Approval MP 06_0264 (Mod 2)

Project Approval

Section 75J of the *Environmental Planning and Assessment Act 1979*

I approve the application referred to in schedule 1, subject to the conditions in schedules 2 to 5.

These conditions are required to:
- prevent, minimise, and/or offset adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the project.

The Hon Kristina Keneally MP
Minister for Planning

Sydney **2008**

SCHEDULE 1

Application Number:	06_0264
Proponent:	Buttai Gravel Pty Limited (Daracon Quarries)
Approval Authority:	Minister for Planning
Land:	Lot 1 DP 1001734 Lot 218 DP 751028 Lot 1 DP 1164494 Lot 39 DP 751028 Lot 49 DP 751028 Lot 187 DP 751028 Various Crown public roads
Project:	Ardglen Quarry Extension

Blue type represents December 2010 modification (MOD 1)
Green type represents March 2021 modification (MOD 2)

TABLE OF CONTENTS

DEFINITIONS

Aboriginal object / Aboriginal place	Has the same meaning as the definition of the term in section 5 of the *National Parks and Wildlife Act 1974*
Annual Review	The review required by condition 4 in Schedule 5
Applicant	Buttai Gravel Pty Limited (Daracon Quarries), or any person carrying out any development under this consent
ARTC	Australia Rail Track Corporation
BCA	Building Code of Australia
BCS	Biodiversity, Conservation and Science Directorate within the Department
BCT	Biodiversity Conservation Trust
Biodiversity Offset Areas	The areas shown conceptually in Appendix 3
Biodiversity Offset Strategy	The Biodiversity Offset Strategy described in the EA and Response to Submissions and as shown conceptually in Appendix 3, subject to any revisions required under condition 25 of Schedule 3
Calendar year	A period of 12 months from 1 January to 31 December
CCC	Community Consultative Committee
Conditions of this consent	Conditions contained in Schedules 2 to 5
Construction	All physical works to enable quarrying operations to be carried out, including demolition and removal of buildings or works, and erection of buildings and other infrastructure permitted by this consent
Council	Liverpool Plains Shire Council
Day	The period from 7.00am to 6.00pm on Monday to Saturday, and 8.00am to 6.00pm on Sundays and Public Holidays
Department	Department of Planning, Industry and Environment
Development	The development as described in the documents listed in condition 2 of Schedule 2, as modified by the conditions of this consent
DPIE Crown Lands	Crown Lands Group within the Department
DPIE Water	Water Group within the Department
EA	Environmental assessment titled *Ardglen Quarry Extension Environmental Assessment,* dated June 2007, including the response to submissions, dated November 2007
EA MOD 2	Means: • the amended environmental assessment titled *Section 4.55 Modification to Existing Consent* dated May 2019 prepared by Monteath & Powys; • the Response To Submissions dated 14 November 2018 prepared by Monteath & Powys; • additional information dated 12 September 2019 prepared by Monteath & Powys; and • additional information dated 24 October 2019, 28 February 2020 and 23 April 2020 prepared by Daracon
EEC	Endangered Ecological Community as defined under the NSW *Biodiversity Conservation Act 2016*
Environment	Includes all aspects of the surroundings of humans, whether affecting any human as an individual or in his or her social groupings
EPA	NSW Environment Protection Authority
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation 2000*
EPL	Environment Protection Licence
Evening	The period from 6.00pm to 10.00pm
Extension Area	The Extension Area as shown in Appendix 1
Feasible	Means what is possible and practical in the circumstances
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
Laden trucks	Trucks transporting quarry products from the site and/or trucks transporting blending products to the site
Land	Land means the whole of a lot, or contiguous lots owned by the same landowner, in a current plan registered at the Land Titles Office at the date of this consent

Material harm	Is harm to the environment that: • involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial; or • results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment) This definition excludes "harm" that is authorised under either this consent or any other statutory approval
MEG	Regional NSW – Mining, Exploration and Geoscience
Minister	Minister for Planning and Public Spaces, or delegate
Minimise	Implement all reasonable and feasible mitigation measures to reduce the impacts of the development
MOD 2	The modification described in EA MOD 2
Non-compliance	An occurrence, set of circumstances or development that is a breach of this consent
Night	The period from 10.00pm to 7.00am on Monday to Saturday, and 10.00pm to 8.00am on Sundays and Public Holidays
Planning Secretary	Planning Secretary under the EP&A Act, or nominee
Privately-owned Land	Land that is not owned by a public agency, or a quarrying company (or its subsidiary)
Processing	Includes all crushing, grinding or screening undertaken in the production of quarrying products
Quarry access route	The access route from the New England Highway to the site entrance, comprising Ardglen Street (Main Street), High Street (Swinging Ridges Road), St Stephen Street and Warra Street
Quarrying operations	The extraction, processing, stockpiling and transportation of extractive materials carried out on the site and the associated removal of vegetation, topsoil and overburden
Quarrying products	Includes all saleable quarry products, but excludes tailings and other wastes and rehabilitation material
Reasonable	Means applying judgement in arriving at a decision, taking into account: mitigation benefits, costs of mitigation versus benefits provided, community views, and the nature and extent of potential improvements
Rehabilitation	The restoration of land disturbed by the development to a good condition, to ensure it is safe, stable and non-polluting
Residence	Existing or approved dwelling at the date of grant of this consent
Site	The land referred to in Schedule 1 and shown outlined in red in Appendix 1
Statement of Commitments	The Applicant's commitments in Appendix 4
TfNSW	Transport for NSW
Truck movements	Means combined inbound and outbound movements
Waste	Has the same meaning as the definition of the term in the Dictionary to the POEO Act

SCHEDULE 2
ADMINISTRATIVE CONDITIONS

Obligation to Minimise Harm to the Environment

1. In addition to meeting the specific performance measures and criteria in this consent, all reasonable and feasible measures must be implemented to prevent, and if prevention is not reasonable and feasible, minimise, any material harm to the environment that may result from the construction and operation of the development, and any rehabilitation required under this consent.

Terms of Consent

2. The Applicant must carry out the development:
   (a) generally in accordance with the EA;
   (b) generally in accordance with the EA MOD 2;
   (c) generally in accordance with the Statement of Commitments; and
   (d) in compliance with the conditions of this consent.

   Note: The general layout of the development is shown in Appendix 1.

3. The conditions of this consent and any reasonable and feasible requirement/s of the Planning Secretary prevail to the extent of any inconsistency, ambiguity or conflict between them and a document/s listed in condition 2(a)-(c) of this Schedule. In the event of an inconsistency, ambiguity or conflict between any of the document/s listed in condition 2(a)-(c) of this Schedule, the most recent document prevails to the extent of the inconsistency, ambiguity or conflict.

4. The Applicant must comply with any reasonable and feasible requirement/s of the Planning Secretary arising from the Department's assessment of:
   (a) any reports, plans, programs, strategies or correspondence that are submitted in accordance with this approval; and
   (b) the implementation of any actions or measures contained in these reports, plans, programs, strategies or correspondence.

Limits on Consent

5. This consent expires on 31 August 2038.

   Note: Under this consent, the Applicant is required to rehabilitate the site and implement biodiversity offsets to the satisfaction of the Planning Secretary. Consequently, this consent will continue to apply in all other respects other than the right to conduct extractive operations until the site has been rehabilitated and the biodiversity offset provided to a satisfactory standard.

6. The Applicant must not extract or process more than 500,000 tonnes of material on the site each year.

7. The Applicant must not transport more than:
   (a) 250,000 tonnes of quarrying products from the site by rail a year;
   (b) 500,000 tonnes of quarrying products from the site by road a year; and
   (c) a combined total of 500,000 tonnes of quarrying products by rail and/or road a year.

8. The Applicant must not import more than 80,000 tonnes of materials for the purposes of blending and product quality improvement each year.

Surrender of Consents

9. Within 3 years of this consent, the Applicant must surrender all development consents or continuing use rights for the Ardglen Quarry, to the satisfaction of the Planning Secretary.

Management Plans/Monitoring Programs

10. With the approval of the Planning Secretary, the Applicant may submit any management plan or monitoring program required by this consent on a progressive basis.

Structural Adequacy

11. The Applicant must ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA.

Notes:
- *Under Division 6.2 of the EP&A Act, the Applicant is required to obtain construction and occupation certificates for the proposed building works.*
- *Part 8 of the EP&A Regulation sets out the requirements for the certification of development.*

Demolition

12. The Applicant must ensure that all demolition work is carried out in accordance with *Australian Standard AS 2601-2001: The Demolition of Structures*, or its latest version.

Operation of Plant and Equipment

13. The Applicant must ensure that all plant and equipment used at the site is:
    (a) maintained in a proper and efficient condition; and
    (b) operated in a proper and efficient manner.

Protection of Public Infrastructure

14. The Applicant must:
    (a) repair, or pay all reasonable costs associated with repairing any public infrastructure that is damaged by the development; and
    (b) relocate, or pay all reasonable costs associated with relocating any public infrastructure that needs to be relocated as a result of the development.

Use of Crown Roads

14A. The Applicant must make reasonable efforts to assist in the transfer of any Crown roads forming part of the quarry access route to Council, prior to undertaking any works in the Extension Area.

Revision of Strategies, Plans or Programs

15. Within three months of:
    (a) the submission of an incident report under condition 3 of Schedule 5;
    (b) the submission of an Annual Review under condition 4 of Schedule 5;
    (c) the submission of an Independent Environmental Audit under condition 5 of Schedule 5;
    (d) the approval of any modification of the conditions of this consent (unless the conditions require otherwise),

    the suitability of existing strategies, plans and programs required under this consent must be reviewed by the Applicant.

16. The Applicant must continue to apply existing management strategies, plans or programs approved prior to the approval of MOD 2, until the approval of a similar plan, strategy or program following the determination of MOD 2.

17. If necessary, to either improve the environmental performance of the development, cater for a modification or comply with a direction, the strategies, plans and programs required under this consent must be revised, to the satisfaction of the Planning Secretary and submitted to the Planning Secretary for approval within six weeks of the review.

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

18. Where conditions of this consent require consultation with an identified party, the Applicant must:
    (a) consult with the relevant party prior to submitting the subject document; and
    (b) provide details to the Department of the consultation undertaken including:
        (i) the outcome of that consultation, matters resolved and unresolved; and
        (ii) details of any disagreement remaining between the party consulted and the Applicant and how the Applicant has addressed the matters not resolved.

SCHEDULE 3
SPECIFIC ENVIRONMENTAL CONDITIONS

HOURS OF OPERATION

1. The Applicant must comply with the hours of operation in Table 1.

Table 1: Hours of Operation

Activity	Day	Time
Topsoil/overburden removal/emplacement	Monday-Saturday	7.00am to 5.00pm
	Sunday	None
Blasting	Monday-Friday	10:00am to 3.00pm
	Saturdays, Sundays and Public Holidays	None
In-pit activities (including drilling, extraction, and transfer of material out of the pit)	Monday-Saturday	7.00am to 5:30pm
	Sundays and Public Holidays	None
Out-of-pit activities (including processing, and stockpiling)	Monday-Saturday	7.00am to 5:30pm
	Sundays and Public Holidays	None
Maintenance (if inaudible at nearby residences)	Monday-Sunday	Any time
Truck loading and distribution	Monday-Saturday	6.30am to 5.30pm
	Sundays and Public Holidays	None
Rail loading	Monday-Sunday	7:00am to 10:00pm

Note:
- *The Applicant may load no more than 2 trains each year outside the hours listed in Table 1 (see condition 41).*
- *The Applicant may carry out blasting operations outside the hours listed in Table 1 for safety reasons provided the Applicant has notified EPA and the local community about the proposed blast.*

NOISE

Noise Impact Assessment Criteria

2. The Applicant must ensure that the combined construction and operational noise generated by the development does not exceed the noise impact assessment criteria in Table 2 at any residence on privately-owned land, except where construction works are authorised under a Construction Noise Protocol which has been approved by the Planning Secretary under condition 4A of this Schedule.

Table 2: Noise impact assessment criteria dB(A)

Land	Day	Evening	Night	
	$L_{Aeq(15\ min)}$	$L_{Aeq(15\ min)}$	$L_{Aeq(15\ min)}$	$L_{A1(1\ min)}$
4	44	35	35	45
5, 6	45	35	35	45
9	37	35	35	45

Land	Day	Evening	Night	
	$L_{Aeq(15\ min)}$	$L_{Aeq(15\ min)}$	$L_{Aeq(15\ min)}$	$L_{A1(1\ min)}$
10	38	35	35	45
12, 14	36	35	35	45
15	43	35	35	45
16	40	35	35	45
All other privately-owned land	35	35	35	45

However, if the Applicant has a written negotiated noise agreement with any landowner of the land listed in Table 2, and a copy of this agreement has been forwarded to the Department and EPA, then the Applicant may exceed the noise limits in Table 2 in accordance with the negotiated noise agreement. The Applicant may also exceed the $L_{A1(1\ min)}$ and $L_{Aeq(15\ min)}$ noise impact assessment criteria during out of hours rail loading activities provided they are conducted in accordance with condition 41 below.

Notes:

- *For information on the numbering and identification of properties used in this approval see Appendix 5.*
- *Noise generated by the development must be measured in accordance with the relevant requirements and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy (EPA, 2000). Appendix 6 sets out the meteorological conditions under which these criteria apply and the requirements for evaluating compliance with these criteria.*

3. The Applicant must undertake all construction work within standard construction hours (7.00am to 6.00 pm Monday to Friday and 8.00am to 1.00pm Saturday, excluding Sundays and Public Holidays).

4. The Applicant must ensure that combined construction and operational noise generated by the development does not exceed the limits outlined in Table 2 of this Schedule, except where:

   (a) the Applicant has a written negotiated agreement with the owner(s) of the relevant residence/land as outlined in condition 2 of this Schedule; or

   (b) an alternative temporary limit has been approved by the Planning Secretary for specific construction works or for a fixed period of time.

4A. In order to seek an alternative temporary construction noise limit under condition 4(b) of this Schedule, the Applicant must submit a Construction Noise Protocol to the Planning Secretary for approval, prior to undertaking the nominated construction works. This protocol must:

   (a) be prepared in consultation with the EPA and any landowners who may be affected by noise generated by the nominated construction works; and

   (b) address the relevant requirements of the Interim Construction Noise Guideline (DECC 2009).

4B. The Applicant must implement any Construction Noise Protocol as approved by the Planning Secretary.

Operating Conditions

4C. The Applicant must:

   (a) take all reasonable steps to minimise noise from construction and operational activities, including low frequency noise and other audible characteristics, as well as road noise associated with the development;

   (b) operate a noise management system to guide day to day planning of quarrying operations and implementation of both proactive and reactive noise mitigation measures to ensure compliance with the relevant conditions of this consent;

   (c) take all reasonable steps to minimise the noise impacts of the development during noise-enhancing meteorological conditions, particularly when the noise criteria in this consent do not apply (see Appendix 6);

   (d) carry out regular noise monitoring (at least once a month while quarrying operations are being carried out, unless otherwise agreed by the Planning Secretary) to determine whether the development is complying with the relevant conditions of this consent; and

   (e) regularly assess the noise monitoring data and modify or stop operations on the site to ensure compliance with the relevant conditions of this consent.

4D. Prior to carrying out any processing activities under this consent, the Applicant must implement the recommended noise mitigation measures as outlined in the MOD 2 EA to the satisfaction of the Planning Secretary.

4E. The Applicant must not operate processing equipment while undertaking:
(a) rail loading; and/or
(b) topsoil/overburden removal or emplacement.

Continuous Improvement

5. The Applicant must:
(a) investigate ways to reduce the noise generated by the development, including off-site road and rail noise and maximum noise levels which may result in sleep disturbance; and
(b) report on these investigations and the implementation and effectiveness of these measures in the Annual Review, to the satisfaction of the Planning Secretary.

Monitoring

6. The Applicant must prepare a Noise Monitoring Program for the development in consultation with EPA and to the satisfaction of the Planning Secretary. The program must:
(a) include:
(i) a combination of attended and unattended noise monitoring measures;
(ii) detailed measures to comply with condition 4C of this Schedule; and
(iii) a noise monitoring protocol for evaluating compliance with the noise criteria in Table 2 of this Schedule; and
(b) be submitted to the Planning Secretary for approval within three months of the determination of MOD 2 (or other timeframe as agreed by the Planning Secretary).

6A. The Applicant must implement the Noise Monitoring Program as approved by the Planning Secretary.

BLASTING AND VIBRATION

Airblast Overpressure Criteria

7. The Applicant must ensure that the airblast overpressure level from blasting at the development does not exceed the criteria in Table 5 at any privately-owned residence.

Table 5: Airblast overpressure impact assessment criteria

Airblast overpressure level (dB(Lin Peak))	Allowable exceedance
115	5% of the total number of blasts over a period of 12 months
120	0%

Ground Vibration Impact Assessment Criteria

8. The Applicant must ensure that the ground vibration level from blasting at the development does not exceed the criteria in Table 6 at any privately-owned residence.

Table 6: Ground vibration impact assessment criteria

Peak particle velocity (mm/s)	Allowable exceedance
5	5% of the total number of blasts over a period of 12 months
10	0%

Blasting Frequency

9. The Applicant must not carry out more than 30 blasts a year, or more than 1 blast per day, without the written approval of the Planning Secretary.

Operating Conditions

10. The Applicant must implement best blasting practice to:
(a) protect the safety of people, property, public infrastructure and livestock; and

(b) minimise the dust and fume emissions from blasting at the development, to the satisfaction of the Planning Secretary.

11. The Applicant must not undertake blasting within 500 metres of any privately-owned land or any land not owned by the Applicant, unless suitable arrangements have been made with the landowner and any tenants to minimise the risk of flyrock-related impact to the property to the satisfaction of the Planning Secretary.

Public Notice

12. The Applicant must:
    (a) notify the landowner/occupier of any residence within 1 kilometre of the quarry pit who registers an interest in being notified about the blasting schedule at the quarry;
    (b) operate a Blasting Hotline, or alternate system agreed to by the Planning Secretary, to enable the public to get up-to-date information on the blasting schedule at the quarry;
    (c) keep local residents informed about this hotline (or any alternative notification protocols), to the satisfaction of the Planning Secretary.

Property Investigations

13. If any landowner of privately-owned land within 1 kilometre of the site claims that buildings and/or structures on his/her land have been damaged as a result of blasting at the site, following commencement of operations within the extension area, then he/she may ask the Planning Secretary in writing to investigate the claim.

    If the Planning Secretary is satisfied that an independent property investigation is warranted, the Applicant must within 3 months of the Planning Secretary's determination:
    (a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Planning Secretary, to investigate the claim; and
    (b) give the landowner a copy of the property investigation report.

    If this independent property investigation confirms the landowner's claim, and both parties agree with these findings, then the Applicant must repair the damages to the satisfaction of the Planning Secretary.

    If the Applicant or landowner disagrees with the findings of the independent property investigation, then either party may refer the matter to the Planning Secretary for resolution.

Blast Monitoring Program

14. The Applicant must prepare a Blast Monitoring Program for the development in consultation with the EPA and to the satisfaction of the Planning Secretary. This program must:
    (a) include a protocol for demonstrating compliance with the blasting criteria in Table 6 of this Schedule; and
    (b) be submitted to the Planning Secretary for approval within three months of the determination of MOD 2 (or other timeframe as agreed by the Planning Secretary).

14A. The Applicant must implement the Blast Monitoring Program as approved by the Planning Secretary.

AIR QUALITY

Impact Assessment Criteria

15. The Applicant must ensure that the dust emissions generated by the development do not cause additional exceedances of the air quality impact assessment criteria listed in Tables 8, 9 and 10 at any residence on privately-owned land.

Table 8: Long term impact assessment criteria for particulate matter

Pollutant	Averaging period	Criterion
Total suspended particulate (TSP) matter	Annual	[a, c] 90 µg/m^3
Particulate matter < 10 µm (PM_{10})	Annual	[a, c] 25 µg/m^3
Particulate matter < 2.5 µm ($PM_{2.5}$)	Annual	[a, c] 8 µg/m^3

Table 9: Short term impact assessment criterion for particulate matter

Pollutant	Averaging period	Criterion
Particulate matter < 10 µm (PM_{10})	24 hour	[b] 50 µg/m^3
Particulate matter < 2.5 µm ($PM_{2.5}$)	24 hour	[b] 25 µg/m^3

Table 10: Long term impact assessment criteria for deposited dust

Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level
[d]Deposited dust	Annual	[b] 2 g/m^2/month	[a] 4 g/m^2/month

Notes:

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

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

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

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

15A. The air quality criteria in Tables 8, 9 and 10 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.

Operating Conditions

16. The Applicant must:
    (a) take all reasonable steps to:
        (i) minimise the particulate matter (including PM_{10} and $PM_{2.5}$) emissions of the development, paying particular attention to minimising wheel-generated haul road emissions;
        (ii) improve energy efficiency and reduce greenhouse gas emissions of the development;
        (iii) minimise any visible off-site air pollution generated by the development; and
        (iv) minimise the extent of potential dust generating surfaces exposed on the site at any given point in time;
    (b) operate an air quality management system to guide the day to day planning of quarrying operations and implementation of both proactive and reactive air quality mitigation measures to ensure compliance with the relevant conditions of this consent;
    (c) minimise the air quality impacts of the development during adverse meteorological conditions and extraordinary events (see Note C to Tables 8 to 10 above);
    (d) carry out regular air quality monitoring to determine whether the development is complying with the relevant conditions in this consent; and
    (e) regularly assess meteorological and air quality monitoring data and relocate, modify or stop operations on the site to ensure compliance with the relevant conditions of this consent.

Monitoring

17. The Applicant must prepare an Air Quality Monitoring Program for the development in consultation with EPA and to the satisfaction of the Planning Secretary. This program must:
    (a) use a combination of high volume air samplers and dust deposition gauges to monitor the dust emissions from the development;
    (b) include a protocol for demonstrating compliance with the air quality impact assessment criteria in this approval; and
    (c) be submitted to the Planning Secretary for approval prior to within three months of the determination of MOD 2 (or other timeframe as agreed by the Planning Secretary).

17A. The Applicant must implement the Air Quality Monitoring Program as approved by the Planning Secretary.

METEOROLOGICAL MONITORING

18. The Applicant must ensure the development has a suitable meteorological station in the vicinity of the site that:
    (a) complies with the requirements in the *Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales* (DEC, 2007); and
    (b) is capable of measuring meteorological conditions in accordance with the *NSW Industrial Noise Policy* (EPA, 2000),

    unless a suitable alternative is approved by the Planning Secretary following consultation with the EPA.

SURFACE AND GROUND WATER

18A. The Applicant must ensure that the sediment basin described in EA MOD 2 and any associated drainage structures required for the carrying out of the development are located wholly within the site, except as authorised in writing by ARTC and/or DPIE Crown Lands (as relevant).

18B. The Applicant must obtain any necessary licences and/or approvals from DPIE Crown Lands under the *Crown Lands Management Act 2016* prior to:
    (a) carrying out any works on Crown Land; or
    (b) allowing the controlled discharge of water from the site to Doughboy Hollow Creek.

18C. The Applicant must obtain any necessary licences and/or approvals from the ARTC prior to carrying out any works described in the MOD 2 EA within the Right of Carriageway which burdens Lot 1 DP 1001734.

18D. The Applicant must not undertake any excavation exceeding 2 m in depth within 25 m of the Main Northern Railway corridor unless otherwise approved in writing by ARTC.[a]

[a] *The 25 m setback is to be measured from the site boundary adjacent to the Main Northern Railway.*

18E. Prior to commencing quarrying operations in the Extension Area (or other timeframe as agreed by the Planning Secretary), the Applicant must install a groundwater monitoring bore with a minimum depth equivalent to the finished depth of the in-pit sump, in consultation with DPIE Water.

Notes:
- *The in-pit sump is shown in Appendix 1*
- *The purpose of the groundwater monitoring bore is to inform the development of the Groundwater Monitoring Program*

18F. The Applicant must ensure that any works to be conducted on waterfront land are carried out in accordance with *Guidelines for Controlled Activities on Waterfront Land* (2018) and in consultation with DPIE Water.

Surface Water Discharges

19. The Applicant must only discharge water from the site in accordance with the provisions of an EPL.

Site Water Management Plan

20. The Applicant must prepare a Site Water Management Plan for the development,[a] in consultation with EPA, DPIE Water, DPIE Crown Lands and ARTC, and to the satisfaction of the Planning Secretary. This plan must be prepared by suitably qualified expert/s whose appointment/s have been approved by the Planning Secretary, and must include:
    (a) a Site Water Balance;
    (b) an Erosion and Sediment Control Plan; and
    (c) a Surface Water Management Plan;

(d) a Groundwater Monitoring Program; and
(e) a Dewatering Management Plan.[b]

[a] *The Site Water Management Plan must incorporate the existing quarry operations and operations within the extension area*
[b] *In accordance with condition 23D of this Schedule, the Planning Secretary may waive the requirement for a Dewatering Management Plan if no pit dewatering is required*

Site Water Balance

21. The Site Water Balance must include details of:
(a) sources and reliability of water supply;
(a1) predicted annual inflows to and outflows from the site;
(b) water storage capacity;
(c) water use and management on the site;
(d) licensed discharge points and limits;
(e) reporting procedures, including the annual preparation of an updated site water balance during quarrying operations.

Erosion and Sediment Control

22. The Erosion and Sediment Control Plan must:
(a) be consistent with the requirements of the *Managing Urban Stormwater: Soils and Construction Manual* (Landcom 2004, or its latest version);
(b) identify activities that could cause soil erosion and generate sediment;
(c) describe measures to minimise soil erosion and the potential for the transport of sediment to downstream waters;
(d) describe the location, function, and capacity of erosion and sediment control structures; and
(e) describe what measures would be implemented to maintain the structures over time.

Surface Water Management Plan

23. The Surface Water Management Plan must include:
(a) detailed baseline data on surface water quality in Doughboy Hollow Creek;
(b) flow modelling of Doughboy Hollow Creek;
(c) surface water impact assessment criteria, including trigger levels for investigating any potentially adverse impacts, and surface water management performance measures;
(d) a detailed description of the surface water management system on the site, including the:
  (i) clean water diversion system;
  (ii) erosion and sediment controls;
  (iii) dirty water management system; and
  (iv) water storages;
(e) a program to monitor and evaluate:
  (i) any surface water discharges;
  (ii) the effectiveness of the water management system, particularly in minimising the risk of uncontrolled discharges from the site; and
  (iii) surface water flows and quality in watercourses and/or waterbodies that could potentially be impacted by the development;
(f) a protocol for identifying and investigating any exceedances of the surface water impact assessment criteria and for notifying the Department and relevant stakeholders of these events; and
(g) a trigger action response plan to respond to any exceedances of the relevant performance measures or performance criteria.

23A. The Applicant must submit the Site Water Balance, Erosion and Sediment Control Plan and Surface Water Management Plan to the Planning Secretary for approval within three months of the determination of MOD 2 (or other timeframe as agreed by the Planning Secretary).

Groundwater Monitoring Program

23B. The Groundwater Monitoring Program must:
(a) incorporate at least 12 months of baseline data on groundwater levels obtained from the monitoring bore required under condition 18E of this Schedule;

(b) include groundwater performance criteria, including trigger levels for identifying and investigating any potentially adverse groundwater impacts (or trends) associated with the development;
(c) include a program to identify, report on and respond to any unauthorised groundwater interference, including inflows into extraction areas or interaction between on-site water storages and the groundwater system; and
(d) include a protocol to obtain appropriate water licence(s) for any groundwater take; and
(e) be submitted to the Planning Secretary for approval within 12 months of commencing quarrying operations in the Extension Area (or other timeframe as agreed by the Planning Secretary).

Dewatering Management Plan

23D. Unless otherwise agreed by the Planning Secretary[a], the Applicant must prepare a Dewatering Management Plan for the overburden infill area[b] to the satisfaction of the Planning Secretary. This plan must:
(a) include details of:
  (i) any pumping or pipeline infrastructure to be used for dewatering activities;
  (ii) proposed water transfer and discharge arrangements; and
(b) include a program to monitor and report on any dewatering activities that involves any discharges from the site; and
(c) be submitted to the Planning Secretary for approval prior to carrying out emplacement activities in the overburden infill area.

[a] *The Planning Secretary may waive the requirement for a Dewatering Management Plan if no pit dewatering is required*
[b] *The overburden infill area is shown in Appendix 2*

23E. The Applicant must implement the Site Water Management Plan as approved by the Planning Secretary.

REHABILITATION AND LANDSCAPE MANAGEMENT

Rehabilitation

24. The Applicant must progressively rehabilitate the site in a manner that is generally consistent with the conceptual rehabilitation principles and proposed rehabilitation strategy in the documents listed in condition 2(a)-(c) of Schedule 2 and as shown conceptually in Appendix 2, and must comply with the objectives in Table 11.

Table 11: Rehabilitation objectives

Feature	Objective
All areas of the site affected by the development	• Safe • Hydraulically and geotechnically stable • Non-polluting • Fit for the intended post-quarrying operations land use(s) • Final landform integrated with surrounding natural landforms as far as is reasonable and feasible, and minimising visual impacts when viewed from surrounding land
Surface infrastructure	• Decommissioned and removed, unless otherwise agreed by the Planning Secretary
Quarry benches and pit floor	• Landscaped and vegetated using native tree and understorey species representative of Yellow Box White Box Blakely's Red Gum Woodland EEC
Overburden infill area[a]	• Backfilled areas integrated with surrounding natural landforms as far as is reasonable and feasible • Emplacement areas integrated with the site water management system • Establish grassland to support sustainable agricultural activities • Use species found in the local area that are suitable for pasture production

[a] *The overburden infill area is shown in Appendix 2*

Offset Strategy

25. Prior to undertaking any works in the Extension Area, the Applicant must revise the Biodiversity Offset Strategy described in the EA and Response to Submissions (shown conceptually in Appendix 3), to the satisfaction of the Planning Secretary. The revised strategy must be prepared in consultation with the BCS, and include additional areas where Yellow Box White Box Blakely's Red Gum Woodland EEC would be actively re-established within the identified Biodiversity Offset Areas shown in Appendix 3.

26. Prior to undertaking any works in the Extension Area (or other timeframe as agreed by the Planning Secretary), the Applicant must make suitable arrangements to provide appropriate long term security for the Biodiversity Offset Areas to the satisfaction of the BCT.

26A. By the end of June 2021, the Applicant must ensure that the Biodiversity Offset Areas are fenced to an appropriate standard to exclude stock access. The Applicant must maintain the exclusionary fencing over the life of the development, to the satisfaction of the Planning Secretary.

Landscape Management Plan

27. The Applicant must prepare a detailed Landscape Management Plan for the development to the satisfaction of the Planning Secretary. This plan must:
    (a) be prepared by suitably qualified expert/s whose appointment/s have been approved by the Planning Secretary;
    (b) submitted to the Planning Secretary for approval within three months of the determination of MOD 2 (or other timeframe as agreed by the Planning Secretary); and
    (c) include a:
        - Doughboy Hollow Creek Rehabilitation Strategy;
        - Rehabilitation and Biodiversity Offset Management Plan; and
        - Quarry Closure Plan.

    Note: The Department accepts that the initial Landscape Management Plan may not include the detailed Quarry Closure Plan. However, if this occurs, the Applicant will be required to seek approval from the Planning Secretary for an alternative timetable for the completion and approval of the Quarry Closure Plan.

Doughboy Hollow Creek Rehabilitation Strategy

28. The Doughboy Hollow Creek Rehabilitation Strategy must:
    (a) be prepared in consultation with BCS, DPIE Crown Lands and DPIE Water;
    (b) describe the measures that would be implemented to:
        - remove the weir from Doughboy Hollow Creek;
        - rehabilitate sections of the creek within or directly adjacent to Lot 1 DP1001734 and Lot 39 DP 751028; and
        - rehabilitate and/or re-establish riparian vegetation within Lot 39 DP 751028.

Rehabilitation and Biodiversity Offset Management Plan

29. The Rehabilitation and Biodiversity Offset Management Plan must:
    (d) be prepared by suitably qualified expert/s whose appointment/s have been approved by the Planning Secretary;
    (e) describe in general the short, medium, and long term measures that would be implemented to:
        - rehabilitate the site;
        - implement the Biodiversity Offset Strategy and Doughboy Hollow Creek Rehabilitation Strategy; and
        - manage the remnant vegetation and habitat on the site;
    (f) include a detailed description of what measures would be implemented over the next 3 years to implement the Biodiversity Offset Strategy and Doughboy Hollow Creek Rehabilitation Strategy;
    (g) include a detailed description of what measures would be implemented over the next 5 years to rehabilitate the site, including the procedures to be implemented for:
        - progressively rehabilitating areas disturbed by quarrying as shown conceptually in Appendix 2;
        - implementing revegetation and regeneration as shown conceptually in Appendix 2, including establishment of canopy, sub-canopy (if relevant), understorey and ground strata;
        - managing the remnant vegetation and habitat on site;
        - managing impacts on fauna;

- reducing the visual impacts of the development, including the vegetation of the noise barrier shown in Appendix 2 and the establishment of screen planting as described in EA MOD 2 and the Statement of Commitments;
- landscaping the site to minimise visual impacts;
- protecting areas outside the disturbance areas;
- conserving and reusing topsoil;
- collecting and propagating seeds for rehabilitation works;
- salvaging and reusing material from the site for habitat enhancement;
- controlling weeds and feral pests;
- controlling access; and
- bushfire management;

(h) detailed performance and completion criteria for the rehabilitation of the site and implementation of the Biodiversity Offset Strategy and Doughboy Hollow Creek Rehabilitation Strategy;

(i) a detailed description of how the performance of the rehabilitation of the site and implementation of the Biodiversity Offset Strategy and Doughboy Hollow Creek Rehabilitation Strategy would be monitored over time to achieve the relevant objectives and completion criteria;

(j) a description of the potential risks to successful revegetation and/or rehabilitation in the offset areas and development area, and a description of the contingency measures that would be implemented to mitigate these risks; and

(k) details of who is responsible for monitoring, reviewing and implementing the plan.

Quarry Closure Plan

30. The Quarry Closure Plan must:

(l) define the objectives and criteria for quarry closure;

(m) investigate options for the future use of the site, including any final void(s);

(n) describe the measures that would be implemented to minimise or manage the ongoing environmental effects of the development ; and

(o) describe how the performance of these measures would be monitored over time.

30A. The Applicant must implement the Landscape Management Plan as approved by the Planning Secretary.

Rehabilitation Bond

31. Within 6 months of the approval of the Rehabilitation and Biodiversity Offset Management Plan, the Applicant must lodge a Rehabilitation Bond with the Department to ensure that the rehabilitation of the site is implemented in accordance with the performance and completion criteria set out in the plan and the relevant conditions of this consent. The sum of the bond must be an amount agreed by the Planning Secretary and determined by:

(a) calculating the cost of rehabilitating all disturbed areas of the site, taking into account the likely surface disturbance over the next 3 years of quarrying operations; and

(b) employing a suitably qualified, independent and experienced person to verify the calculated costs.

The calculation of the Rehabilitation Bond must be submitted to the Department for approval at least 2 months prior to the lodgement of the bond.

32. The Rehabilitation Bond must be reviewed and, if required, an updated bond must be lodged with the Department within 3 months following:

(a) any update or revision to the Rehabilitation and Biodiversity Offset Management Plan;

(b) the completion of an Independent Environmental Audit in which recommendations relating to rehabilitation have been made; or

(c) in response to a request by the Planning Secretary.

32A. If rehabilitation is completed generally in accordance with the relevant performance and completion criteria, to the satisfaction of the Planning Secretary, the Planning Secretary will release the bond.

32B. If rehabilitation is not completed generally in accordance with the relevant performance and completion criteria, the Planning Secretary will call in all, or part of, the bond and arrange for the completion of the relevant works.

TRANSPORT

Product Transport

33. The Applicant must:
    (a) keep records of the:
        - amount of quarry materials imported onto the site each calendar year;
        - amount of quarrying products transported from the site each calendar year;
        - number of truck movements generated by the development on an hourly basis on any days in which truck loading and distribution occurs;
        - registration plate details and time of departure for all laden trucks dispatched from the quarry;
        - number of train movements generated by the development, on a weekly basis;
        - date and time of each train movement generated by the development;
    (b) provide annual production data to MEG using the standard form for that purpose; and
    (c) include these records in the Annual Review.

Road Safety and Condition Audit

33A. Prior to truck movements associated with the development exceeding 55 movements per day, the Applicant must undertake (and complete) all agreed actions outlined in the Road Safety and Condition Audit Report prepared by Crossroads Civil Design dated October 2018, to the satisfaction of the relevant roads authority (i.e. TfNSW or Council). If there is a dispute about the implementation of these measures, then the Applicant may refer the matter to the Planning Secretary for resolution.

34. By 31 December 2025 or within five years of commencing quarrying operations in the Extension Area (whichever is the latter), the Applicant must undertake a Road Safety and Condition Audit for the development, to the satisfaction of the Planning Secretary. This audit must:
    (a) be prepared by a suitably independent and qualified expert/s whose appointment has been approved by the Planning Secretary;
    (b) be prepared in consultation with the TfNSW and Council;
    (c) assess the safety, performance and condition of the Ardglen Street (Main Street)-New England Highway intersection and the quarry access route; and
    (d) identify any road works that are required to comply with relevant AUSROAD standards or other relevant TfNSW or Council requirements.

35. Within 12 months of completing the Road Safety and Condition Audit required under condition 34 of this Schedule, unless otherwise agreed by the Planning Secretary, the Applicant must undertake (and complete) any road works recommended in the Audit, to the satisfaction of the relevant roads authority (i.e. TfNSW or Council). If there is a dispute about the implementation of these measures, then the Applicant may refer the matter to the Planning Secretary for resolution.

Road Signage

36. Within 3 months of this approval, the Applicant must install warning signs ("Truck Turning") on the northern and southern approaches to the quarry access route on the New England Highway, to the satisfaction of the TfNSW.

Road Maintenance

37. The Applicant must maintain the quarry access route until the cessation of quarrying operations on the site, to the satisfaction of Council.

    If the Applicant and the Council fail to reach agreement on the road maintenance requirements, then either party may refer the matter to the Planning Secretary for resolution. Any determination by the Planning Secretary on this matter will be binding on the Applicant and the Council.

Road Haulage

38. The Applicant must ensure that truck movements associated with the development do not exceed:
    (a) a total of 110 movements per day;
    (b) a total of 5 movements between 6.30 am and 7.00 am; and
    (c) a total of 30 movements per hour between 7.00 am and 5.30 pm.

39. The Applicant must not use trucks which are larger than truck and dog combination vehicles[a] or have a capacity of greater than 38 tonnes to transport product from the site, unless otherwise agreed in writing by TfNSW.

[a] *In this condition, 'truck and dog combination vehicle' means National Class 2 Performance Based Standards Level 1 & 2A Truck and Dog Trailer (or equivalent) as determined by the National Heavy Vehicle Regulator*

40. The Applicant must:
(a) implement a speed limit of not more than 40 kilometres per hour for quarry-related truck movements[a] along the quarry access route;
(b) investigate options to impose a speed limit of 20 kilometres per hour for all heavy vehicle movements along the High Street bridge and install appropriate warning signage, in consultation with Council;
(c) ensure that all laden trucks entering or leaving the site are covered, and are cleaned of materials that may fall onto public roads;
(d) ensure that all laden trucks pass through a wheel wash prior to departing the site; and
(e) take all reasonable steps to minimise traffic safety issues and disruption to local road users.

[a] *In this condition, 'quarry-related truck movements' means trucks used for the transport of quarrying products or the importation of blending material to the site*

40A. Prior to commencing increased truck movements as described in EA MOD 2, or other timing as agreed by the Planning Secretary, the Applicant must undertake road widening along Ardglen Street (Main Street) to achieve a minimum pavement width of 7 m (excluding road shoulders), to the satisfaction of Council.

Rail Loading

41. The Applicant may only load a maximum of 2 trains outside the rail loading and distribution hours in Table 1 in any 12 month period, unless agreed to in writing by the Planning Secretary.

42. If the Applicant intends to undertake out of hours rail loading, it must use its best endeavours to notify all local residents at least 12 hours prior to the proposed rail loading, to the satisfaction of the Planning Secretary.

Traffic and Transport Management Plan

43. The Applicant must prepare a Traffic and Transport Management Plan, to the satisfaction of the Planning Secretary. The plan must:
(a) include a driver code of conduct which outlines;
- safety initiatives for haulage through the village and along school bus routes;
- an induction procedure for truck drivers; and
- complaints handling and disciplinary procedures;

(b) include:
- measures that would be put in place to ensure compliance with the driver code of conduct;
- measures that would be implemented to ensure compliance with condition 40 of this Schedule;
- measures that would be taken to avoid night time train loading operations; and
- procedures for notifying local residents about night time train loading activities when these occur; and

(c) be submitted to the Planning Secretary for approval prior to truck movements associated with the development exceeding 55 movements per day, (or other timeframe as agreed by the Planning Secretary).

43A. The Applicant must implement the Traffic and Transport Management Plan as approved by the Planning Secretary.

VISUAL IMPACT

44. The Applicant must:
(a) take all reasonable steps to minimise the visual and off-site lighting impacts of the development;
(b) ensure that all external lighting associated with the development complies with *Australian Standard AS4282 (INT) 1995 – Control of Obtrusive Effects of Outdoor Lighting*,
to the satisfaction of the Planning Secretary.

ABORIGINAL CULTURAL HERITAGE

45. The Applicant must not destroy any known Aboriginal object or Aboriginal place (as defined in the *National Parks and Wildlife Act 1974*) without the written approval of the Planning Secretary.

45A. If any previously unknown Aboriginal object or Aboriginal place is discovered on the site:

(a) all work in the immediate vicinity of the object or place must cease immediately;

(b) a 10 metre buffer area around the object or place must be cordoned off; and

(c) Heritage NSW must be contacted immediately.

45B. Work in the immediate vicinity may only recommence if:

(a) the potential Aboriginal object or Aboriginal place is confirmed by Heritage NSW upon consultation with the Registered Aboriginal Parties not to be an Aboriginal object or Aboriginal Place; or

(b) an Aboriginal Cultural Heritage Management Plan is prepared in consultation with Registered Aboriginal Parties and Heritage NSW, and to the satisfaction of the Planning Secretary; or

(c) the Planning Secretary is satisfied as to the measures to be implemented in respect of the Aboriginal object or Aboriginal place and makes a written direction in that regard.

45C. If suspected human remains are discovered on site, then all work surrounding the area must cease, and the area must be secured. The Applicant must immediately notify NSW Police and Heritage NSW, and work must not recommence in the area until authorised by NSW Police and NSW.

GREENHOUSE GAS

46. The Applicant must:

(a) monitor the greenhouse gas emissions generated by the development;

(b) investigate ways to reduce greenhouse gas emissions generated by the development; and

(c) report on greenhouse gas monitoring and abatement measures in the Annual Review, to the satisfaction of the Planning Secretary.

WASTE MINIMISATION

47. The Applicant must:

(a) manage on-site sewage treatment and disposal in accordance with the requirements of an applicable EPL, and to the satisfaction of EPA and Council;

(b) minimise the waste generated by the development;

(c) ensure that the waste generated by the development is appropriately stored, handled, and disposed of; and

(a) report on waste minimisation and management in the Annual Review.

48. The Applicant must ensure that all waste generated or stored on site is assessed, classified and managed in accordance with the EPA's *Waste Classification Guidelines Part 1: Classifying Waste*.

SCHEDULE 4
ADDITIONAL PROCEDURES

NOTIFICATION OF LANDOWNERS

1. If the results of monitoring required in Schedule 3 identify that impacts generated by the development are greater than the relevant impact assessment criteria, then the Applicant must notify the Planning Secretary and the affected landowners and/or existing or future tenants (including tenants of quarry owned properties) accordingly, and provide quarterly monitoring results to each of these parties until the results show that the development is complying with the relevant criteria.

NOTIFICATION OF EXCEEDANCES

1A. As soon as practicable and no longer than 7 days after obtaining monitoring results showing an exceedance of any noise, blasting or air quality criterion in Schedule 3 of this consent, the Applicant must provide the details of the exceedance to any affected landowners and/or tenants. For any exceedance of any air quality criterion in Schedule 3 of this consent, the Applicant must also provide to any affected land owners and tenants a copy of the fact sheet entitled "*Mine Dust and You"* (NSW Health, 2017).

INDEPENDENT REVIEW

2. If a landowner (excluding quarry owned properties) considers that the operations of the development are exceeding the impact assessment criteria in Schedule 3 then he/she may ask the Planning Secretary in writing for an independent review of the impacts of the development on his/her land.

3. If the Planning Secretary is not satisfied that an independent review is warranted, the Planning Secretary will notify the landowner in writing of that decision, and the reasons for that decision, within 21 days of the request for a review.

4. If the Planning Secretary is satisfied that an independent review is warranted, within 3 months, or as otherwise agreed by the Planning Secretary and the landowner, of the Planning Secretary's decision, the Applicant must:
   (a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Planning Secretary, to:
      (i) consult with the landowner to determine their concerns;
      (ii) conduct monitoring to determine whether the development is complying with the relevant criteria in Schedule 3 of this consent; and
      (iii) if the development is not complying with that criteria, identify measures that could be implemented to ensure compliance with the relevant criteria; and
   (b) give the Planning Secretary and landowner a copy of the independent review; and
   (c) comply with any written requests made by the Planning Secretary to implement any findings of the review.

SCHEDULE 5
ENVIRONMENTAL MANAGEMENT, MONITORING, AUDITING & REPORTING

ENVIRONMENTAL MANAGEMENT STRATEGY

1. The Applicant must prepare and implement an Environmental Management Strategy for the development to the satisfaction of the Planning Secretary. This strategy must:
   (a) provide the strategic framework for environmental management of the development;
   (b) identify the statutory requirements that apply to the development;
   (c) describe in general how the environmental performance of the development would be monitored and managed;
   (d) 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; and
      - respond to emergencies; and
   (e) describe the role, responsibility, authority, and accountability of all the key personnel involved in environmental management of the development.

1A. The Applicant must not carry out quarrying operations under this consent until the Environmental Management Strategy is approved by the Planning Secretary.

ENVIRONMENTAL MONITORING

2. Any condition of this consent that requires the carrying out of monitoring or an environmental audit, whether directly or by way of a plan, strategy or program, is taken to be a condition requiring monitoring or an environmental audit under Division 9.4 of Part 9 of the EP&A Act. This includes conditions in respect of incident notification, reporting and response, non-compliance notification, compliance report and independent audit.

   For the purposes of this condition, as set out in the EP&A Act, "monitoring" is monitoring of the development to provide data on compliance with the consent or on the environmental impact of the development, and an "environmental audit" is a periodic or particular documented evaluation of the development to provide information on compliance with the consent or the environmental management or impact of the development.

2A. Noise, blast and/or air quality monitoring under this consent may be undertaken at suitable representative monitoring locations instead of at privately-owned residences or other locations listed in Schedule 3, providing that these representative monitoring locations are set out in the respective management plan(s) and/or monitoring program(s).

REPORTING

Incident Notification

3. 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 to compliance@planning.nsw.gov.au and identify the development (including the development application number and name) and set out the location and nature of the incident.

Non-Compliance Notification

3A. 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 to compliance@planning.nsw.gov.au 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, why 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.

***Note**: A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.*

Annual Reporting

4. By the end of March in each year after the granting of the development consent, or other timeframe agreed by the Planning Secretary, a report must be submitted to the Department reviewing the environmental performance of the development, to the satisfaction of the Planning Secretary. This review must:
   (a) describe the development (including any rehabilitation) that was carried out in the previous calendar year, and the development that is proposed to be carried out over the current financial/calendar year;
   (b) include a comprehensive review of the monitoring results and complaints records of the development over the previous calendar year, including a comparison of these results against the:
      (i) relevant statutory requirements, limits or performance measures/criteria;
      (ii) requirements of any plan or program required under this consent;
      (iii) monitoring results of previous years; and
      (iv) relevant predictions in the documents listed condition 2(a)-(c) of Schedule 2.
   (c) identify any non-compliance or incident which occurred in the previous calendar year, and describe what actions were (or are being) taken to rectify the non-compliance and avoid reoccurrence;
   (d) evaluate and report on:
      (i) the effectiveness of the noise and air quality management systems; and
      (ii) compliance with the performance measures, criteria and operating conditions of this consent;
   (e) identify any trends in the monitoring data over the life of the development;
   (f) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and
   (g) describe what measures will be implemented over the next calendar year to improve the environmental performance of the development.

INDEPENDENT ENVIRONMENTAL AUDIT

5. Prior to 31 December 2012, and every 5 years thereafter, unless the Planning Secretary directs otherwise, the Applicant must commission and pay the full cost of an Independent Environmental Audit of the development. This audit must:
   (a) be led by a suitably qualified, experienced and independent auditor whose appointment has been endorsed by the Planning Secretary;
   (b) be conducted by a suitably qualified, experienced and independent team of experts (including any expert in field/s specified by the Planning Secretary) whose appointment has been endorsed by the Planning Secretary;
   (c) be carried out in consultation with the relevant agencies and the CCC;
   (d) assess the environmental performance of the development and whether it is complying with the relevant requirements in this consent, water licences and mining leases for the development (including any assessment, strategy, plan or program required under these approvals);
   (e) review the adequacy of any approved strategy, plan or program required under the abovementioned approvals and this consent;
   (f) recommend appropriate measures or actions to improve the environmental performance of the development and any assessment, strategy, plan or program required under the abovementioned approvals and this consent; and
   (g) be conducted and reported to the satisfaction of the Planning Secretary.

6. Within three months of commencing an Independent Environmental Audit, or within another timeframe agreed by the Planning Secretary, the Applicant must submit a copy of the audit report to the Planning Secretary, and any other NSW agency that requests it, together with its response to any recommendations contained in the audit report, and a timetable for the implementation of the recommendations. The recommendations must be implemented to the satisfaction of the Planning Secretary.

COMMUNITY CONSULTATIVE COMMITTEE

7. The Applicant must operate a Community Consultative Committee (CCC) for the project to the satisfaction of the Planning Secretary, in accordance with the Department's *Community Consultative Committee Guidelines: State Significant Projects* (2019).

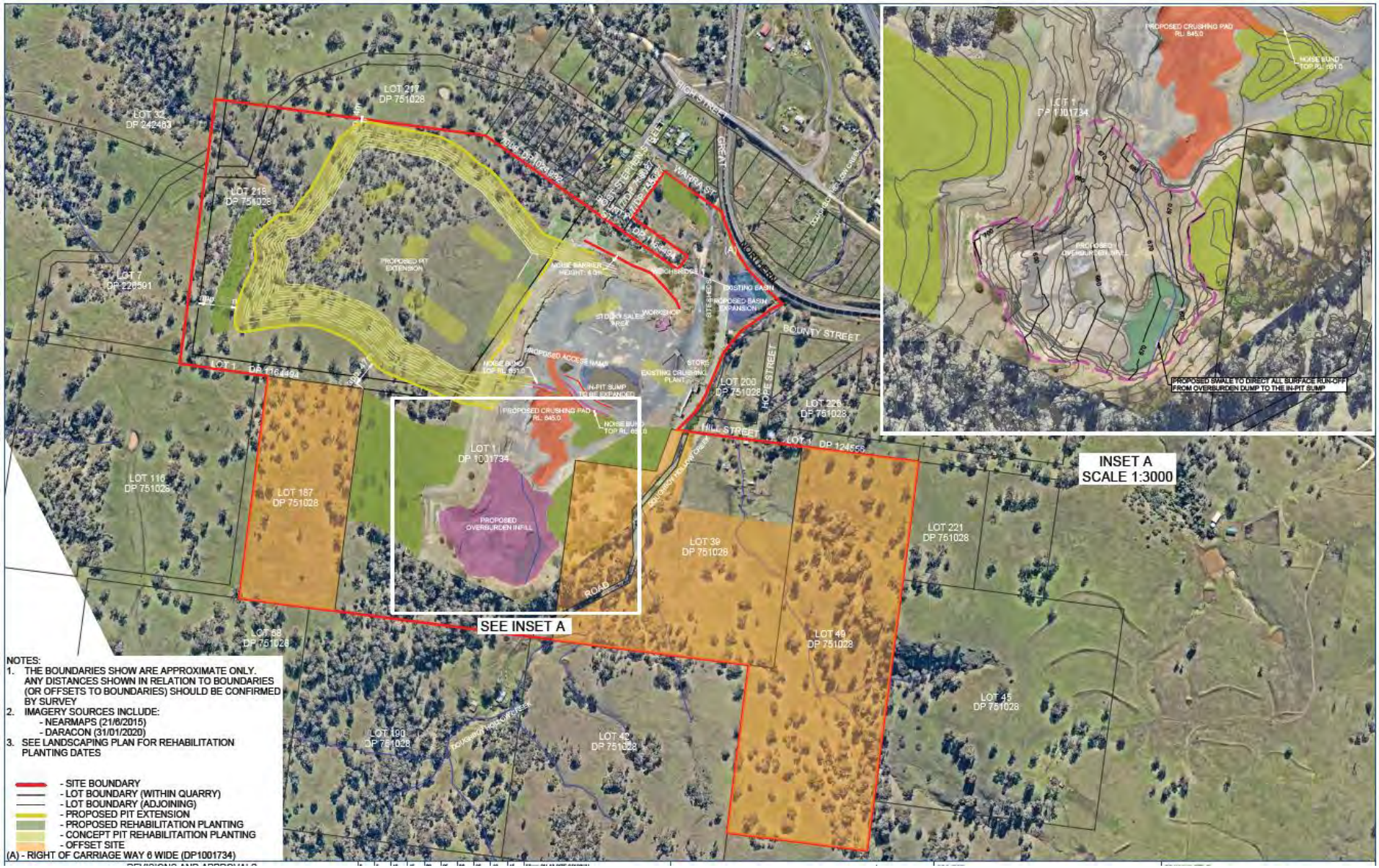
ACCESS TO INFORMATION

8. Within 3 months of the approval of any plan/strategy/program required under this consent (or any subsequent revision of these plans/strategies/programs), or the completion of the audits or Annual Reviews required under this consent, the Applicant must:
   (a) provide a copy of the relevant document/s to the relevant agencies and CCC; and
   (b) put a copy of the relevant document/s on its website.

9. During the development, the Applicant must:
   (a) include a copy of this consent, as may be modified from time to time, on its website;
   (b) provide a full summary of monitoring results required under this consent on its website; and
   (c) update these results on a regular basis (at least every 6 months).

APPENDIX 1 GENERAL PROJECT LAYOUT

APPENDIX 2 CONCEPTUAL REHABILITATION PLAN



APPENDIX 3 CONCEPTUAL OFFSET PLAN

APPENDIX 4 STATEMENT OF COMMITMENTS

Table 1: Statement of Commitments

Item Number	Item	Commitment	Responsibility	Timing
1	Scope of Development	The project will be carried out generally in accordance with the following plans and documentation, except where amended by the conditions of the project approval: • the Environmental Assessment (EA) prepared by ERM (June, 2007) and accompanying specialist reports; • the Response to Submissions report prepared by ERM (November, 2007); and • this revised Statement of Commitments.	Daracon Quarries	Ongoing for the duration of the project.
2	Statutory Requirements	All necessary licences, permits and approvals will be obtained and maintained for the project.	Daracon Quarries	Ongoing for the duration of the project.
3		In accordance with section 104A of the EP&A Act, the proponent will surrender the existing development consent applying to Lot 1 DP 1001734, issued by Murrurundi Shire Council in May 1994.	Daracon Quarries	Within 2 years of work commencing within the extension area.
4	General	The proponent will prepare and implement an Environmental Management System (EMS) based on the AS/NZA ISO 14001:2004 - Environmental Management Systems. The EMS will: • incorporate an operational Environmental Management Plan (EMP); • detail potential environmental risks due to operation of the proposed quarry; • provide measures for the prevention, minimisation and management of these impacts to within acceptable limits; and • provide a means for the project to improve environmental performance and move towards environmental sustainability.	Daracon Quarries	EMS to be submitted for approval prior to work commencing within the extension area.
5	Water Management	The proponent will prepare and implement a Surface Water Management Plan for the project that will include: • an Erosion and Sediment Control Plan (including procedures to minimise erosion, capture of sediment on-site, and maintenance of control structures);	Daracon Quarries	Plan to be submitted for approval prior to work commencing within the extension area.

Item Number	Item	Commitment	Responsibility	Timing
		• a Site Water Balance; and • a Water Quality Monitoring Program		
6	Biodiversity	The proponent will implement the biodiversity offset strategy outlined in the EA, which includes the conservation and long term protection of the areas described in *Table 1*. *Table 1 Biodiversity Offset Areas* Land Description / Area (ha) / Proposed Management Strategy Lot 187 DP 751028 / 8.2 / stock removal, weed control, planting of EEC trees, transport of logs and rocks, provision of nest boxes Lot 39 DP 751028 / 11.65 / stock removal, weed control, major planting of EEC trees and grasses, transport of logs and rocks Lot 49 DP 751028 / 16.3 / stock removal, weed control **Total** / **36.15**	Daracon Quarries	Ongoing for the duration of the project.
7		The proponent will prepare a detailed biodiversity offset management plan in consultation with the DECC and submit it for approval by the Director-General. The plan will include: ▪ proposed staging; ▪ planting details such as final density, species mix, sowing rates, fertiliser; ▪ proposed maintenance schedule; ▪ weed control; ▪ importation of rock and log shelter; ▪ topsoil handling; ▪ fencing;	Daracon Quarries	Plan to be submitted for approval prior to work commencing within the extraction area.

Item Number	Item	Commitment	Responsibility	Timing
		▪ pre-clearing surveys of all hollow bearing trees within the proposed quarry extension area; ▪ herbivore control; and ▪ number and location of nest boxes.		
8		The proponent will make suitable arrangements to provide appropriate long term security for the offset areas.	Daracon Quarries	Within 3 years of work commencing within the extraction area.
9	Noise	The proponent will continue to implement the following measures, which are currently in place at Ardglen Quarry, to mitigate noise impacts: ▪ quarry hours are restricted to between 6am and 5.30pm; ▪ noise created by the haul trucks, both empty and loaded, is reduced by imposing a speed limit of 50 km/h when travelling on local roads between the quarry and the highway. Trucks on site are limited to a speed of 25 km/h; ▪ all on-site, fixed and mobile diesel-powered plant, excluding road vehicles, are correctly fitted and maintained to manufacturer specifications. Particular attention is given to engine exhaust systems and the care and maintenance of mufflers. Further noise control is nominated through the implementation of the following measures: ▪ reduction of equipment through the separation of site activities to overburden stripping and extraction, whereby they do not occur simultaneously; ▪ rail loading will be limited to the day period (7am to 6pm) as much as practicable; ▪ the surge bin will be lined with latex or polymer liners to reduce impulsive noise; ▪ a sheet metal enclosure will be built around the rail loader discharge and extend to include the rail wagon being loaded. The enclosure will be constructed of sheet metal and will cover the length of a minimum of three wagons whereby the wagon being loaded will be in the centre of the enclosure. The enclosure will be open at the ends and will contain a roof which will be connected to the rail loader discharge.	Daracon Quarries	Ongoing for the duration of the project.

Item Number	Item	Commitment	Responsibility	Timing
		Gaps between the loader discharge and the roof will be sealed; ▪ the two scrapers initially assigned for overburden stripping will be replaced by one excavator and two articulated dump trucks; ▪ the existing three crushers will be acoustically treated by extending the metal cladding on the crushing and screening station building to ground level with no gaps or openings; ▪ the existing screens will be located behind earth bunds; and ▪ mobile acoustic barriers or earth mounds will surround the drill rig and any mobile plant situated on the surface during initial stripping; and ▪ where land slopes away from stripping activities to receivers, barriers will be raised to a height of 4 metres, so there is no direct line of sight to receivers.		
10		Except during night-time rail loading activities, the proponent will ensure that the noise generated by the project does not exceed the levels set out in *Table 2*, at any privately-owned residence, unless a specific agreement is reached with the landholder, in which case the proponent may exceed the noise limits set out in *Table 2* in accordance with the negotiated noise agreement.	Daracon Quarries	Ongoing for the duration of the project.

Table 2 Noise Criteria

Land	Noise Level LAeq dB(A)
1 - Burraston	35
2 - Rose	35
4 – CM Thomson	44
5 – M Taylor	45
6 – S Thompson	45
9 – Bates	37
10 – Avery	38

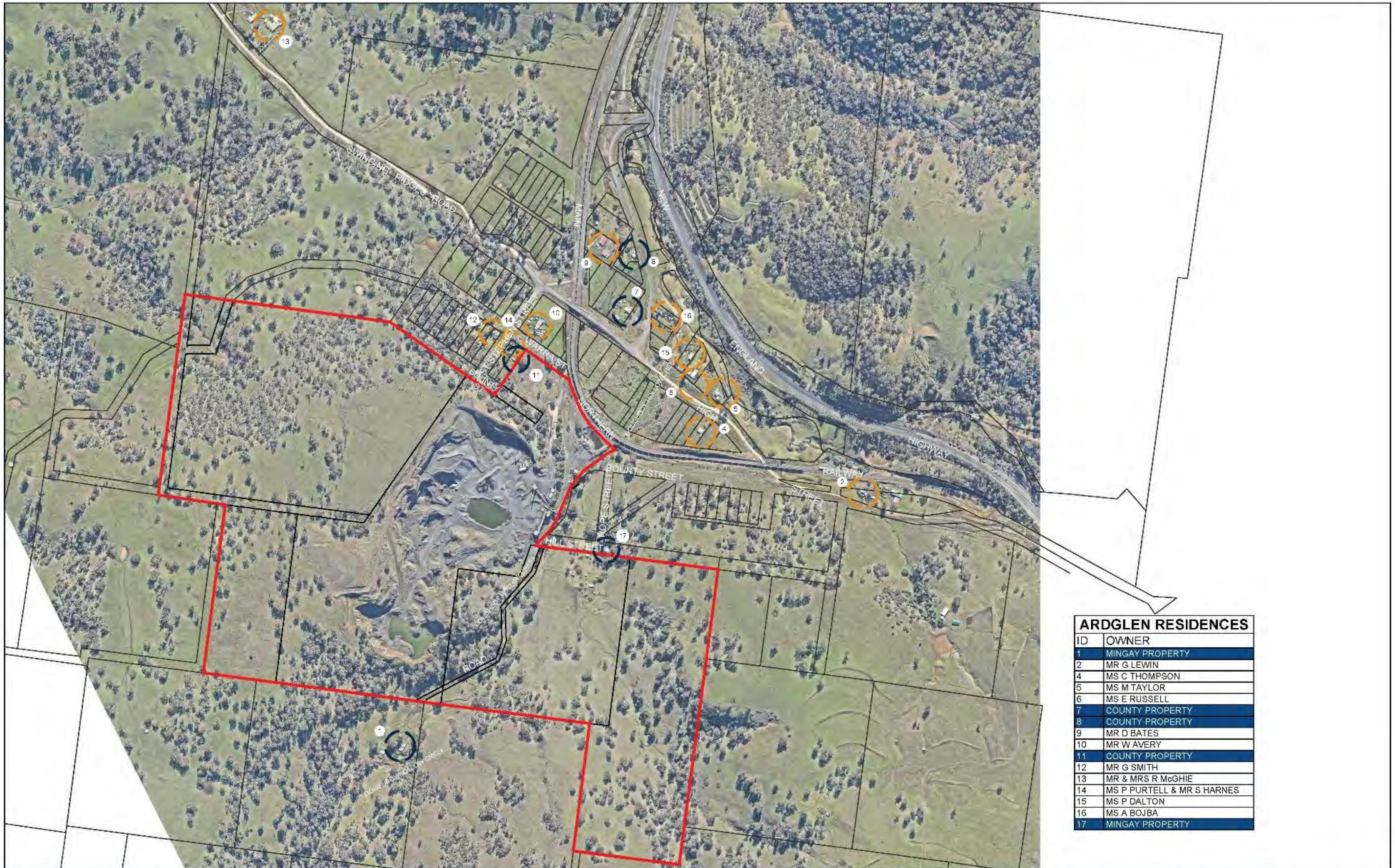
Item Number	Item	Commitment		Responsibility	Timing
		11 – Shipman	37		
		12 – Hall	36		
		13 – McGhie	35		
		14 – Purtell	36		
		15 – J Taylor	43		
		16 - Bojba	40		
11	Blasting and Vibration	The proponent will implement the following measures to mitigate the impacts of blasting and vibration: ▪ blasting will be limited to between the hours of 10am and 4pm, Monday to Friday and residents in the vicinity of the quarry will be given adequate notification of forthcoming blasts; ▪ air-blast overpressure from any blast will not exceed 120 dB(Lpeak) at any privately-owned residence for more than 5% of all blasts over a 12 month period. It will not exceed 115 dB(Lpeak) at any time, unless specific prior agreement is reached with the affected landholder; ▪ peak particle velocity (ppv) from ground vibration will not exceed 5 mm/s at any privately-owned residence for more than 5% of the total number of blasts over a 12 month period. The maximum level will not exceed 10 mm/s at any time; ▪ the existing blast management strategy will continue to be implemented to ensure appropriate charge masses are used to avoid excessive air blast overpressure and ground vibrations; and ▪ a Blast Monitoring Program will be prepared and submitted to the Director-General for approval		Daracon Quarries	Ongoing for the duration of the project.

Item Number	Item	Commitment	Responsibility	Timing
12	Air Quality	In addition to the dust mitigation measures currently employed, the proponent will implement the following measures to ensure particulate matter emissions are minimised: ▪ revegetation of exposed surfaces where possible; ▪ sealing the haul road; ▪ limiting the speed limit on unpaved surfaces to 15 km/hr; ▪ high level watering of unpaved road surfaces (greater than 2L/m2/hr); ▪ covering all loads leaving the site; ▪ building a wheel wash at the end of the unpaved section of the haul road (after the weighbridge); and ▪ wet suppression or chemical coating of static stockpiles.	Daracon Quarries	Ongoing for the duration of the project.
13		The proponent will prepare and implement an air quality monitoring program for the project. The program will include: ▪ a series of dust deposition gauges operated in accordance with Australian/New Zealand Standard AS/NZS 3580.10.1:2003; and ▪ a series of high volume or low volume air samplers to monitor levels of PM10, operated in accordance with Australian/New Zealand AS/NZS 3580.9.6:2003 and AS/NZS 3580.9.6:2003.	Daracon Quarries	Program to be submitted for approval prior to work commencing within the extension area.
14	Rehabilitation	The proponent will prepare a detailed biodiversity offset plan to provide an integrated plan for the whole site, considering the existing quarry areas, the western extension, the areas of box-gum woodland to be preserved and the areas to be planted as offsets. This plan will be prepared in liaison with the DECC and lodged for approval by the Director-General.	Daracon Quarries	Plan to be submitted for approval prior to work commencing within the extension area.
15		The proponent will progressively rehabilitate the site, generally in accordance with the rehabilitation strategy outlined in the EA.	Daracon Quarries	Ongoing for the duration of the project.

Item Number	Item	Commitment	Responsibility	Timing
16		The proponent will lodge a rehabilitation bond with the Director-General to ensure that rehabilitation of the site is satisfactorily completed, generally in accordance with the rehabilitation strategy outlined in the EA.	Daracon Quarries	Within 6 months of work commencing within the extension area.
17	Traffic Management and Access	The proponent will not transport more than 500,000 tonnes of product from the site each year.	Daracon Quarries	Ongoing for the duration of the project.
18		The proponent will keep daily records of: ▪ the type and amount of product transported from the site and the method of transportation i.e. road or rail; and ▪ the type and amount of quarry material imported onto the site and the method of transportation i.e. road or rail.	Daracon Quarries	Ongoing for the duration of the project.
19		The proponent will maintain the quarry access route from the New England Highway to the quarry entrance, to at least its present standard (two lane rural road), to the satisfaction of Council.	Daracon Quarries	Ongoing for the duration of the project.
20	Visual Amenity	The proponent will implement the following mitigation measures to reduce the potential visual impacts of the project: ▪ those areas of the quarry in which the resource has been exhausted will be progressively rehabilitated and revegetated; and ▪ further planting will be undertaken along the ridgeline to the west of the proposed extension area.	Daracon Quarries	Further planting to be undertaken prior to work commencing within the extension area.

21	Aboriginal Cultural Heritage	Should any Aboriginal objects (artefacts) be exposed during ground surface disturbance, all works involving ground surface disturbance will be suspended. A representative of the Nungaroo Local Aboriginal Land Council and an archaeologist will conduct an assessment of the significance of the Aboriginal object(s) and identify appropriate mitigation and management measures.	Daracon Quarries	Ongoing for the duration of the project.
22	Community Consultation	The proponent will continue to engage the community in consultation, with the aim of providing the community with up-to-date information in relation to the project and quarry operations in general, and allowing the community to provide feedback and raise any issues or concerns. On-going consultation will include distribution of an annual community newsletter and individual face-to-face meetings with adjoining landowners and other stakeholders when required.	Daracon Quarries	Ongoing for the duration of the project.
23	Annual Reporting	The proponent will prepare and submit to the Director-General an Annual Environmental Management Report (AEMR). The AEMR will: ▪ include a summary of the environmental monitoring results for the project for the past year; ▪ include an analysis of the monitoring results against relevant limits/criteria and monitoring results from previous years; and ▪ identify and discuss any non-compliances during the past year and detail any actions taken to ensure compliance.	Daracon Quarries	Report to be submitted annually

APPENDIX 5 LOCATION OF RESIDENCES



ARDGLEN RESIDENCES

ID	OWNER
1	MINGAY PROPERTY
2	MR G LEWIN
4	MS C THOMPSON
5	MS M TAYLOR
6	MS E RUSSELL
7	COUNTY PROPERTY
8	COUNTY PROPERTY
9	MR D BATES
10	MR W AVERY
11	COUNTY PROPERTY
12	MR G SMITH
13	MR & MRS R McGHIE
14	MS P PURTELL & MR S HARNES
15	MS P DALTON
16	MS A BOJBA
17	MINGAY PROPERTY

REVISIONS AND APPROVALS

REV	DATE	DESCRIPTION	DRN	CHKD	APPRD
01	19/02/21	ARDGLEN RESIDENCE LOCATIONS	MH	LR	JC
02	05/03/21	UPDATED OWNER TABLE	MH	LR	JC

0 5 10 15 20 25 30 35 40 45 50mm ON A3 SIZE ORIGINAL

SCALE: H 1:8000		V 1:8000	
SURVEY DATE:		PLOTTED BY:	malcolmh
12d MODEL PROJECT:	Site Plan	COORD. SYSTEM:	MGA94
PLOT DATE:	Fri Mar 5 14:15:51 2021	HEIGHT DATUM:	AHD
PLOT FILE:	BAR-MAP-RES-001_02	ORIGIN OF LEVELS:	

DARACON Group
DARACON GROUP
20 KULLARA CLOSE, BERESFIELD NSW
AUSTRALIA 2322
PH: 02 4974 9200 dgroup@daracon.com.au
FAX: 02 4951 1070 www.daracon.com.au
BERESFIELD | AUBURN | MOUNT THORLEY | GUNNEDAH

PROJECT: QUARRY DEVELOPMENT
ARDGLEN QUARRY
DARACON JOB No: BAR
CLIENT: BUTTA GRAVEL PTY LTD
CLIENT JOB No:
DRAWING STATUS: FOR INFORMATION
SHEET: 1 of 1

DRAWING TITLE:
ARDGLEN
LOCATION OF RESIDENCES
NEARMAP IMAGE DATED 21/06/15

A3 | BAR-MAP-RES-001 (DRAWING NUMBER) | 02 (REV)

APPENDIX 6 NOISE COMPLIANCE ASSESSMENT

Applicable Meteorological Conditions

1. The noise criteria in Schedule 3 of this consent are to apply under all meteorological conditions except the following:

   (a) where 3°C/100 metres (m) lapse rates have been assessed, then:

      (i) wind speeds greater than 3 metres/second (m/s) measured at 10m above ground level;

      (ii) temperature inversion conditions between 1.5°C and 3°C/100m and wind speeds greater than 2m/s measured at 10m above ground level; or

      (iii) temperature inversion conditions greater than 3°C/100m.

   (b) where Pasquill Stability Classes have been assessed, then:

      (i) wind speeds greater than 3m/s at 10m above ground level;

      (ii) stability category F temperature inversion conditions and wind speeds greater than 2m/s at 10m above ground level; or

      (iii) stability category G temperature inversion conditions.

Determination of Meteorological Conditions

2. Except for wind speed at microphone height, the data to be used for determining meteorological conditions shall be that recorded by the meteorological station required under condition 18 of Schedule 3 .

Compliance Monitoring

3. A noise compliance assessment must be undertaken within two months of commencement of quarrying operations in the Extension Area. The assessment must be conducted by a suitably qualified and experienced acoustical practitioner and must assess compliance with noise criteria presented above. A report must be provided to EPA within 1 month of the assessment.

4. Unless otherwise agreed by the Planning Secretary, attended compliance monitoring must be carried out in accordance with the relevant requirements for reviewing performance set out in the *NSW Industrial Noise Policy* (EPA, 2000), in particular the requirements relating to:

   (a) monitoring locations for the collection of representative noise data;

   (b) meteorological conditions during which collection of noise data is not appropriate;

   (c) equipment used to collect noise data, and conformity with Australian Standards relevant to such equipment; and

   (d) modifications to noise data collected, including for the exclusion of extraneous noise and/or penalties for modifying factors apart from adjustments for duration,

   (e) modifying factors apart from adjustments for duration,

   with the exception of applying appropriate modifying factors for low frequency noise during compliance testing. This should be undertaken in accordance with Fact Sheet C of the *NSW Noise Policy for Industry* (EPA, 2017).

Appendix 2 Noise monitoring reports

9 August 2023

Ref: 212176R/30083

Daracon Quarries Pty Ltd
PO Box 299
WALLSEND NSW 2287

RE: AUGUST 2023 NOISE MONITORING RESULTS – ARDGLEN QUARRY

This letter report presents the results of attended and unattended noise monitoring conducted for the Ardglen Quarry (AQ) between Monday 31st July and Thursday 3rd August, 2023. The monitoring was carried out to measure noise emissions from the operations of the quarry. Noise monitoring was carried out in accordance with the conditions of the AQ Noise Monitoring Plan (NMP) as detailed below.

NOISE CRITERIA

*The Proponent shall ensure that the noise generated by the project does not exceed the noise impact assessment criteria in **Table 1** at any residence on privately-owned land, or more than 25% of any privately owned land.*

Table 1
Noise Impact Assessment Criteria

Land	*Day*	*Evening*	*Night*	
	Leq (15 min)	*Leq (15 min)*	*Leq (15 min)*	*L1 (1 min)*
1 Burraston	*35*	*35*	*35*	*45*
3 Rose	*35*	*35*	*35*	*45*
4 C M Thompson	*44*	*35*	*35*	*45*
5 M Taylor	*45*	*35*	*35*	*45*
6 S Thompson	*45*	*35*	*35*	*45*
9 Bates	*37*	*35*	*35*	*45*
10 Avery	*38*	*35*	*35*	*45*
11 Shipman	*37*	*35*	*35*	*45*
12 Hall	*36*	*35*	*35*	*45*
13 McGhie	*35*	*35*	*35*	*45*
14 Purtell	*36*	*35*	*35*	*45*
15 J Taylor	*43*	*35*	*35*	*45*
16 Bojba	*40*	*35*	*35*	*45*
All other privately owned land	*35*	*35*	*35*	*45*

However, if the Proponent has a written negotiated noise agreement with any landowner of the land listed in Table 1, and a copy of this agreement has been forwarded to the Department and the DECCW, then the Proponent may exceed the noise limits in Table 1 in accordance with the negotiated agreement. The Proponent may also exceed the L1 (1 min) and Leq (15 min) noise impact criteria during out of hours rail loading activities provided they are conducted in accordance with Section 3, Condition 41 of the Project Approval (which is reproduced below).

> *41. The Proponent may only load a maximum of 2 trains outside the rail loading and distribution hours listed in Table 1 (of the Project Approval, being Monday to Sunday 7:00am to 10:00pm) in any 12 month period, unless agreed in writing by the Director General.*
>
> *Notes:*
>
> - *For information on the numbering and identification of properties used in this approval see Figure 2 on Page 14 of this Noise Monitoring Program).*
> - *To determine compliance with the LAeq (15 minute) noise limits, noise from the project is to be measured at the most affected point on or within the residential boundary, or at the most affected point within 30 metres of a dwelling (rural situations) where the dwelling is more than 30 metres from the boundary. Where it can be demonstrated that direct measurement of noise from the development is impractical, the DECCW may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.*
> - *To determine compliance with the L1 (1 minute) noise limits, noise from the project is to be measured 1m from the dwelling facade. Where it can be demonstrated that direct measurement of noise from the development is impractical, the DECCW may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy).*
> - *The noise emission limits identified in the above table apply under meteorological conditions of:*
>   - *wind speeds of up to 3 m/s at 10 metres above ground level; or*
>   - *Temperature inversion conditions of up to 3ºC/100m, and wind speeds of up to 2 m/s at 10 metres above ground level.*

NOISE MONITORING LOCATIONS

Noise measurement locations for the attended noise survey are listed below and shown in the accompanying **Figure 1**:

Location 4: C M Thompson
Location 13: McGhie
Location 14: Purtell
Location 16: Bojba

Figure 1 – Attended Noise Monitoring Locations

ATTENDED NOISE MEASUREMENTS

Noise emission levels were measured with a Brüel & Kjær Type 2250 Precision Sound Analyser. This instrument has Type 1 characteristics as defined in AS1259-1982 "Sound Level Meters". Calibration of the instrument was confirmed with a Brüel & Kjær Type 4231 Sound Level Calibrator prior to and at the completion of measurements.

Meteorological data used in this report was obtained from the quarry operated weather station with real time observations made at the start of each 15 minute monitoring period (and confirmed with reference to the summary data provided by the proponent at the time of reporting. The weather throughout the survey was mild with clear skies. The wind speed was light from the west north west.

RESULTS OF ATTENDED MONITORING

The measured noise levels, over 1 second intervals, were analysed using Brüel & Kjær "*Evaluator*" software. The software enables the contributions of the quarry and other significant noise sources to the overall to be quantified.

Noise levels were recorded for each of the Leq (15 min), Lmax, L1, L10, L90 and Lmin percentiles. As shown in Table 1, the noise criterion for AQ during the day is based on an Leq noise level. The results, shown in **Table 2**, represent the total 15 minute Leq noise level for all noise sources and the relative contributions of each. Levels for the other percentiles are not shown as they have no compliance criteria for comparison but are available on request. The exception is the L1 (1 min) noise level (which is the standard measure of sleep disturbance) which is applicable to noise emissions at night (i.e. between 10 pm and 7 am).

Table 2 Ardglen Quarry Noise Monitoring Results – 3rd August 2023 (Day)				
Location	Time	dB(A),L_{eq}	Wind speed/ direction˚	Identified Noise Sources
4. Thompson	10:45 am	49	2.2 m/s 298˚	Birds (47), traffic (41), AQ (40)
13. McGhie	10:10 am	37	2.0 m/s 260˚	Traffic (36), birds (31), AQ inaudible
14. Purtell	10:28 am	46	2.3 m/s 284˚	Birds (44), traffic (42), AQ occasionally audible
16. Bojba	11:10 am	45	1.8 m/s 309˚	Traffic (43), birds (42), AQ inaudible

The results in Table 2 show that, under the meteorological and operating conditions at the time, the noise emissions from AQ were compliant with the relevant noise criteria at all monitoring locations.

At the time of the noise monitoring the following plant items were operational at the quarry;

- 1x Warrior screen,
- 1x 35t Excavator,
- 1x 972 front end loader, and
- 1x Hilux ute with trailer mounted water cart.

The noise from AQ was audible and measurable only at location 4. At this location the noise was attributable to the screening activity, including noise from the loader feeding material into the screen. The noise level varied cyclically depending on the stage of screening process.

At location 14 the noise from AQ was occasionally faintly audible but it was not loud or consistent enough to be measured. The noise was from the screening activity.

At the other two monitoring locations AQ was inaudible.

The results of the noise monitoring programme have shown that AQ is operating within approved noise limits. No actions are recommended with respect to noise management at the Quarry.

UNATTENDED NOISE MEASUREMENTS

The NMP requires that unattended noise logging be undertaken over a period of three days, part of which coincides with the quarterly attended noise monitoring.

To measure the acoustic environment an ARL EL-315 environmental noise logger and an ARL Ngara environmental noise logger, were located as shown in Figure 2 from 31st July to 3rd August, 2023. **Table 3** shows a summary of the relevant measured data from the loggers which is also shown graphically in **Appendix A**.

TABLE 3 Measured Logger Noise Levels dB(A) – 31sy July to 3rd August 2023						
Logger Location	Day (7am to 6pm)		Evening (6pm to 10 pm)		Night (10pm to 7am)	
	Leq	L90	Leq	L90	Leq	L90
Logger 1	57	42	53	39	48	32
Logger 2	57	44	55	38	55	32

Figure 2 – Unattended Noise Monitoring Locations

The logger locations were chosen to be representative of the acoustic environment of the closest residences to the quarry and for security reasons.

Logger 1 was located on the fence at location R14. This is adjacent to the attended noise monitoring location for this residence.

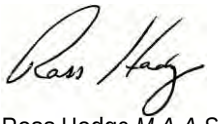
Logger 2 was in an open paddock north of the house.

The unattended noise loggers measure the total noise level in the environment but the data cannot discriminate between various noise sources. As such, the data is presented here with no further analysis.

We trust this report fulfils your requirements at this time, however, should you require additional information or assistance please contact the undersigned on 0412 023 455.

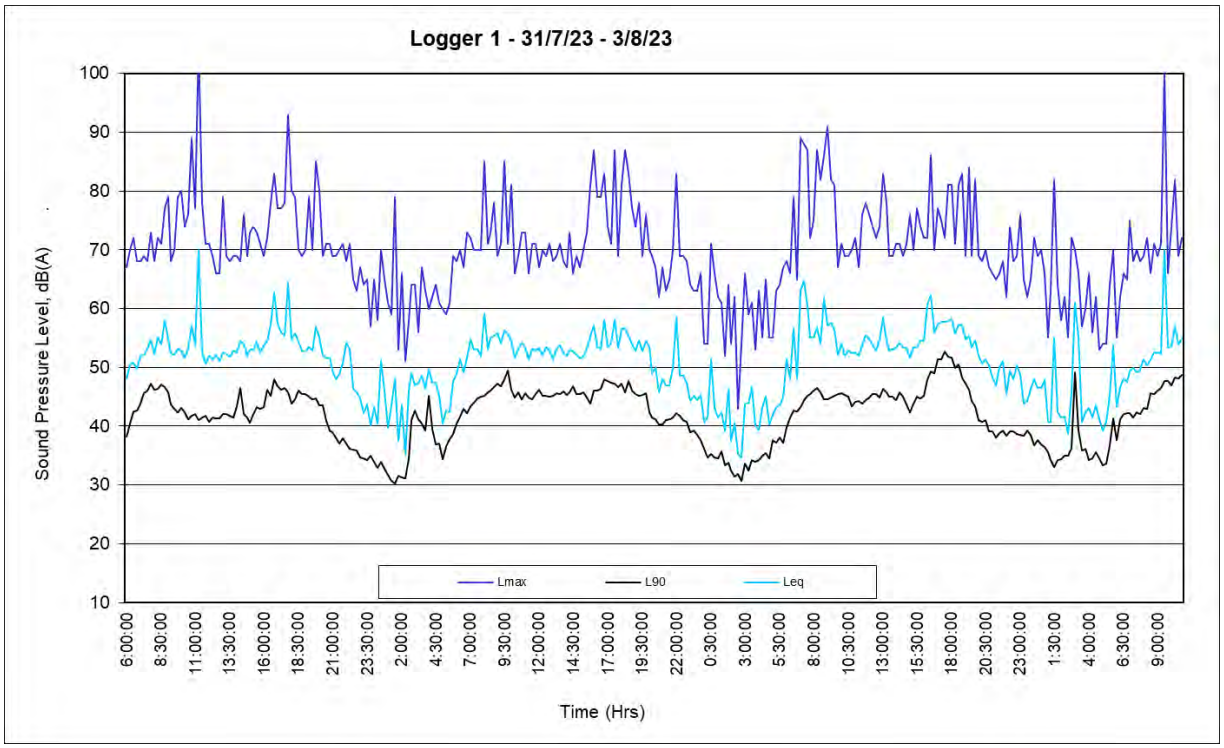
Yours faithfully,
SPECTRUM ACOUSTICS PTY LIMITED

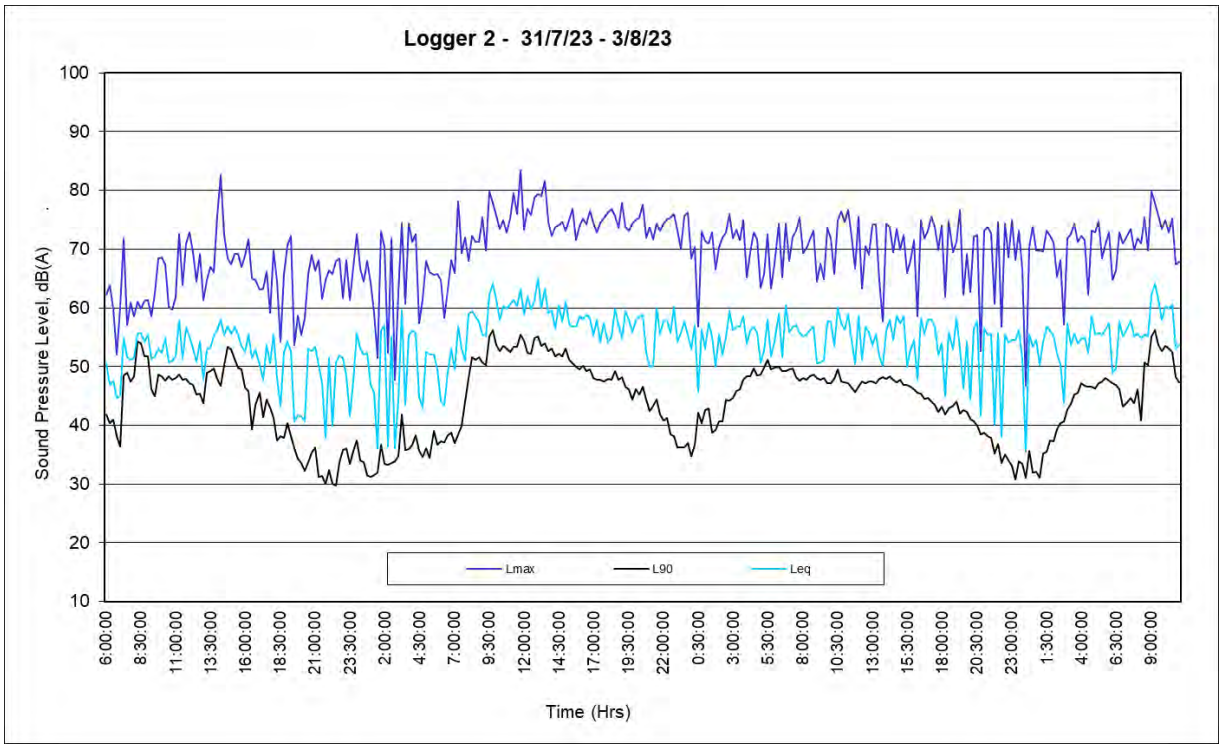
Author:



Ross Hodge *M.A.A.S.*
Acoustical Consultant

APPENDIX A
NOISE LOGGER CHARTS





4 October 2023

Ref: 212176R/30136

Daracon Quarries Pty Ltd
PO Box 299
WALLSEND NSW 2287

RE: SEPTEMBER 2023 NOISE MONITORING RESULTS – ARDGLEN QUARRY

This letter report presents the results of attended and unattended noise monitoring conducted for the Ardglen Quarry (AQ) between Friday 22nd and Wednesday 27th September, 2023. The monitoring was carried out to measure noise emissions from the operations of the quarry. Noise monitoring was carried out in accordance with the conditions of the AQ Noise Monitoring Plan (NMP) as detailed below.

NOISE CRITERIA

*The Proponent shall ensure that the noise generated by the project does not exceed the noise impact assessment criteria in **Table 1** at any residence on privately-owned land, or more than 25% of any privately owned land.*

Table 1
Noise Impact Assessment Criteria

Land	*Day*	*Evening*	*Night*	
	Leq (15 min)	*Leq (15 min)*	*Leq (15 min)*	*L1 (1 min)*
1 Burraston	*35*	*35*	*35*	*45*
3 Rose	*35*	*35*	*35*	*45*
4 C M Thompson	*44*	*35*	*35*	*45*
5 M Taylor	*45*	*35*	*35*	*45*
6 S Thompson	*45*	*35*	*35*	*45*
9 Bates	*37*	*35*	*35*	*45*
10 Avery	*38*	*35*	*35*	*45*
11 Shipman	*37*	*35*	*35*	*45*
12 Hall	*36*	*35*	*35*	*45*
13 McGhie	*35*	*35*	*35*	*45*
14 Purtell	*36*	*35*	*35*	*45*
15 J Taylor	*43*	*35*	*35*	*45*
16 Bojba	*40*	*35*	*35*	*45*
All other privately owned land	*35*	*35*	*35*	*45*

However, if the Proponent has a written negotiated noise agreement with any landowner of the land listed in Table 1, and a copy of this agreement has been forwarded to the Department and the DECCW, then the Proponent may exceed the noise limits in Table 1 in accordance with the negotiated agreement. The Proponent may also exceed the L1 (1 min) and Leq (15 min) noise impact criteria during out of hours rail loading activities provided they are conducted in accordance with Section 3, Condition 41 of the Project Approval (which is reproduced below).

> *41. The Proponent may only load a maximum of 2 trains outside the rail loading and distribution hours listed in Table 1 (of the Project Approval, being Monday to Sunday 7:00am to 10:00pm) in any 12 month period, unless agreed in writing by the Director General.*
>
> *Notes:*
>
> - *For information on the numbering and identification of properties used in this approval see Figure 2 on Page 14 of this Noise Monitoring Program).*
> - *To determine compliance with the LAeq (15 minute) noise limits, noise from the project is to be measured at the most affected point on or within the residential boundary, or at the most affected point within 30 metres of a dwelling (rural situations) where the dwelling is more than 30 metres from the boundary. Where it can be demonstrated that direct measurement of noise from the development is impractical, the DECCW may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.*
> - *To determine compliance with the L1 (1 minute) noise limits, noise from the project is to be measured 1m from the dwelling facade. Where it can be demonstrated that direct measurement of noise from the development is impractical, the DECCW may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy).*
> - *The noise emission limits identified in the above table apply under meteorological conditions of:*
>   - *wind speeds of up to 3 m/s at 10 metres above ground level; or*
>   - *Temperature inversion conditions of up to 3ºC/100m, and wind speeds of up to 2 m/s at 10 metres above ground level.*

NOISE MONITORING LOCATIONS

Noise measurement locations for the attended noise survey are listed below and shown in the accompanying **Figure 1**:

Location 4: C M Thompson
Location 13: McGhie
Location 14: Purtell
Location 16: Bojba

Figure 1 – Attended Noise Monitoring Locations

ATTENDED NOISE MEASUREMENTS

Noise emission levels were measured with a Brüel & Kjær Type 2250 Precision Sound Analyser. This instrument has Type 1 characteristics as defined in AS1259-1982 "Sound Level Meters". Calibration of the instrument was confirmed with a Brüel & Kjær Type 4231 Sound Level Calibrator prior to and at the completion of measurements.

Meteorological data used in this report was obtained from the quarry operated weather station with real time observations made at the start of each 15 minute monitoring period (and confirmed with reference to the summary data provided by the proponent at the time of reporting). The weather throughout the survey was mild with clear skies. The wind speed was light from the west north west.

RESULTS OF ATTENDED MONITORING

The measured noise levels, over 1 second intervals, were analysed using Brüel & Kjær "*Evaluator*" software. The software enables the contributions of the quarry and other significant noise sources to the overall to be quantified.

Noise levels were recorded for each of the Leq (15 min), Lmax, L1, L10, L90 and Lmin percentiles. As shown in Table 1, the noise criterion for AQ during the day is based on an Leq noise level. The results, shown in **Table 2**, represent the total 15 minute Leq noise level for all noise sources and the relative contributions of each. Levels for the other percentiles are not shown as they have no compliance criteria for comparison but are available on request. The exception is the L1 (1 min) noise level (which is the standard measure of sleep disturbance) which is applicable to noise emissions at night (i.e. between 10 pm and 7 am).

Table 2 Ardglen Quarry Noise Monitoring Results – 27th September 2023 (Day)				
Location	Time	dB(A),L_{eq}	Wind speed/ direction˚	Identified Noise Sources
4. Thompson	10:30 am	43	1.7 m/s 298˚	Traffic (41), AQ (37), birds (35)
13. McGhie	9:55 am	33	0.8 m/s 286˚	Traffic (31), birds (30), AQ inaudible
14. Purtell	10:12 am	46	1.0 m/s 294˚	Birds (43), traffic (42), AQ occasionally audible
16. Bojba	10:50 am	50	6.6 m/s 318˚	Traffic (50), birds (35), AQ occasionally audible

The results in Table 2 show that, under the meteorological and operating conditions at the time, the noise emissions from AQ were compliant with the relevant noise criteria at all monitoring locations.

At the time of the noise monitoring the following plant items were operational at the quarry;

- 1 x 35t Volvo excavator,
- 1 x Caterpillar 972 loader,
- 1 x Warrior screen screening rock,
- 2 x steel bin Truck and dogs carting oversize rock, being loaded by 972 loader,
- 1 x 2" water pump running intermittently, and
- 1 x Light vehicle with watercart trailer operating intermittently.

The noise from AQ was audible and measurable only at location 4. At this location the noise was attributable to the screening activity.

At location 14 the noise from AQ was occasionally faintly audible but it was not loud or consistent enough to be measured. The noise was from the screening activity.

At location 16 the noise from AQ was audible as occasional loud noise events possibly associated truck movements on site.

At location 13 AQ was not audible.

The results of the noise monitoring programme have shown that AQ is operating within approved noise limits. No actions are recommended with respect to noise management at the Quarry.

UNATTENDED NOISE MEASUREMENTS

The NMP requires that unattended noise logging be undertaken over a period of three days, part of which coincides with the quarterly attended noise monitoring.

To measure the acoustic environment an ARL EL-315 environmental noise logger and an ARL Ngara environmental noise logger, were located as shown in Figure 2 from 22nd to 27th September, 2023 (which includes a weekend). **Table 3** shows a summary of the relevant measured data from the loggers which is also shown graphically in **Appendix A**. Note that the summary data presented in Table 3 is excludes the weekend period, whilst the graphical data is for the entire monitoring period.

TABLE 3 Measured Logger Noise Levels dB(A) – 22nd to 27th September 2023[1]						
Logger Location	Day (7am to 6pm)		Evening (6pm to 10 pm)		Night (10pm to 7am)	
	Leq	L90	Leq	L90	Leq	L90
Logger 1	58	37	54	34	53	25
Logger 2	53	31	51	33	50	28

1 see text regarding dates of monitoring

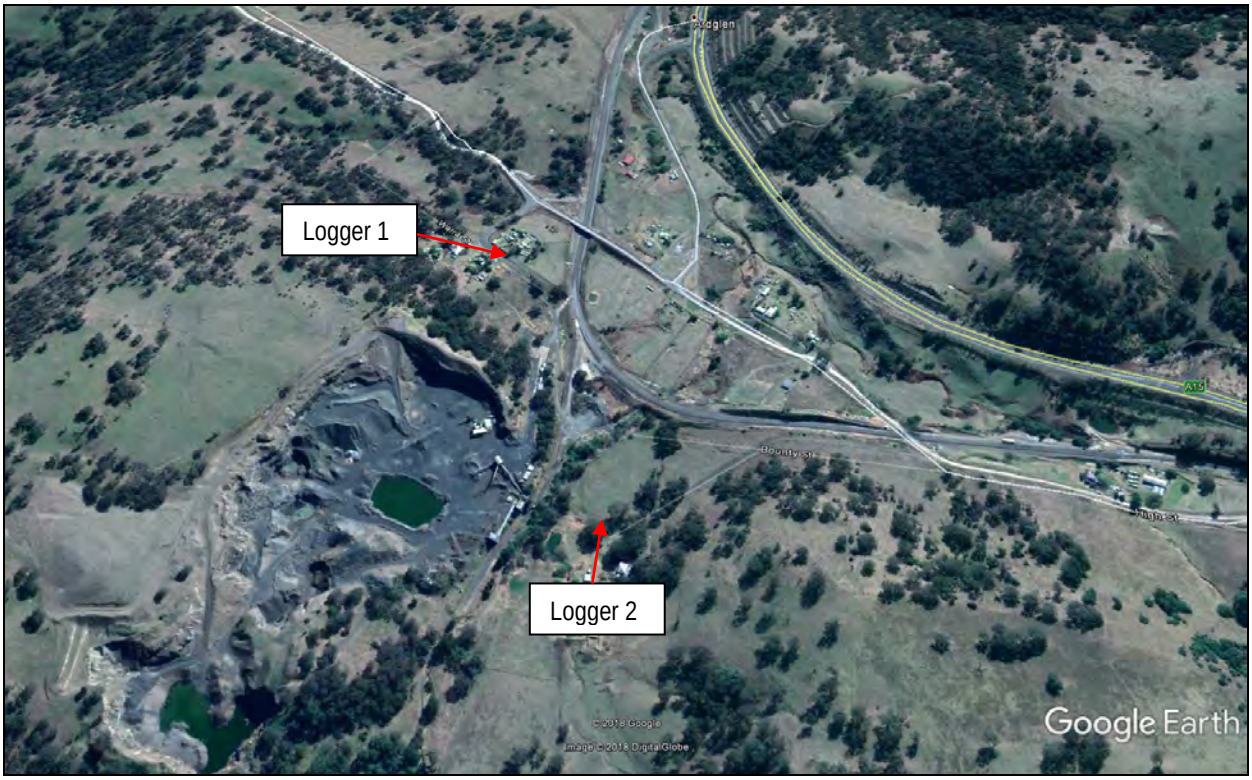


Figure 2 – Unattended Noise Monitoring Locations

The logger locations were chosen to be representative of the acoustic environment of the closest residences to the quarry and for security reasons.

Logger 1 was located on the fence at location R14. This is adjacent to the attended noise monitoring location for this residence.

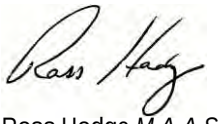
Logger 2 was in an open paddock north of the house.

The unattended noise loggers measure the total noise level in the environment, but the data cannot discriminate between various noise sources. As such, the data is presented here with no further analysis.

We trust this report fulfils your requirements at this time, however, should you require additional information or assistance please contact the undersigned on 0412 023 455.

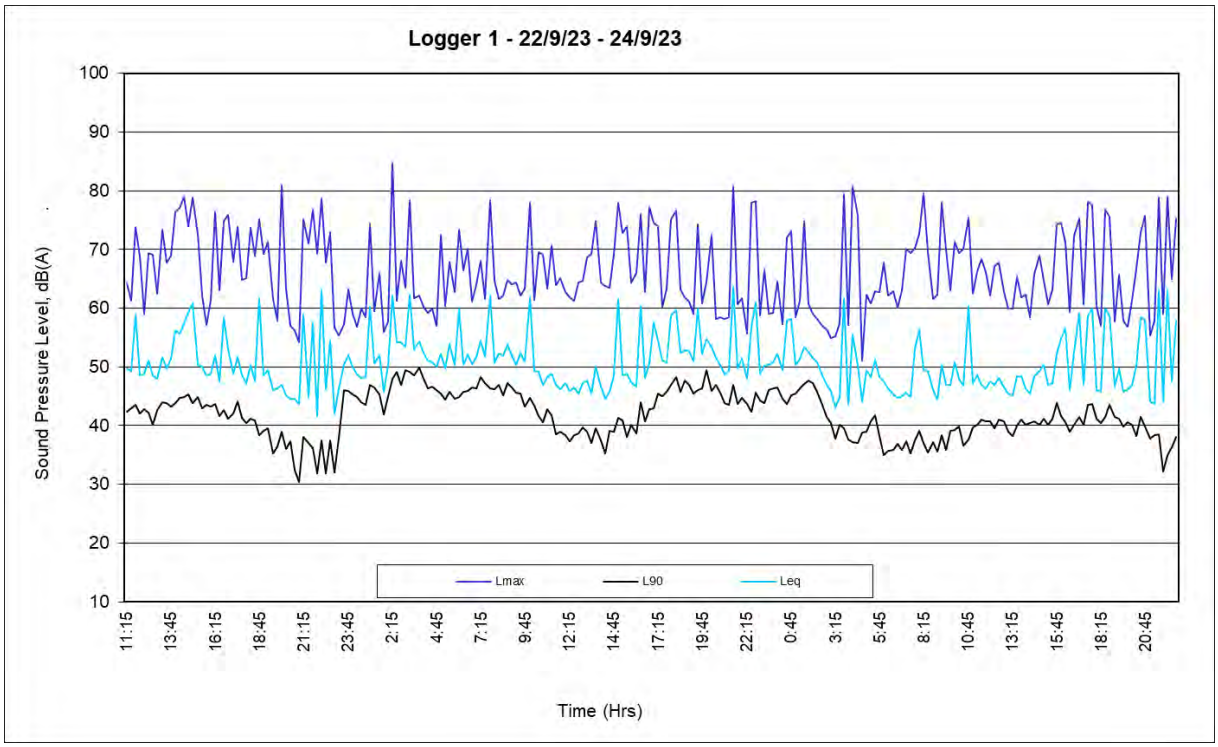
Yours faithfully,
SPECTRUM ACOUSTICS PTY LIMITED

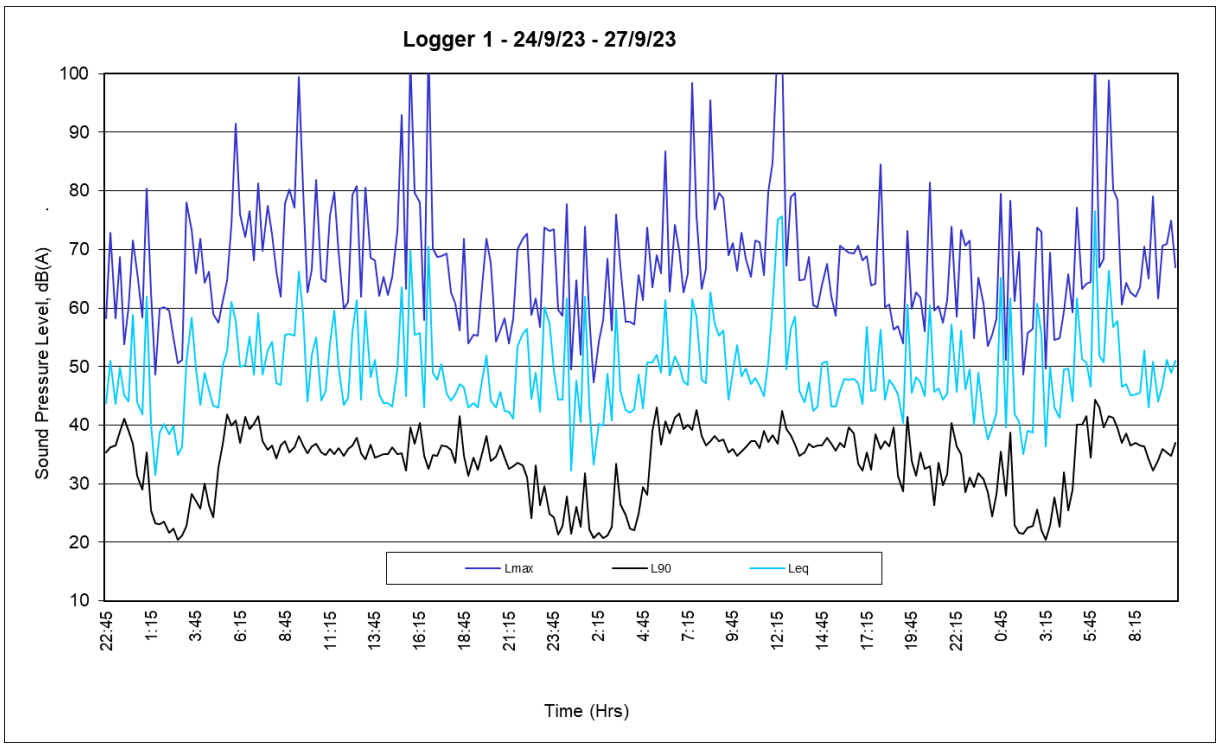
Author:

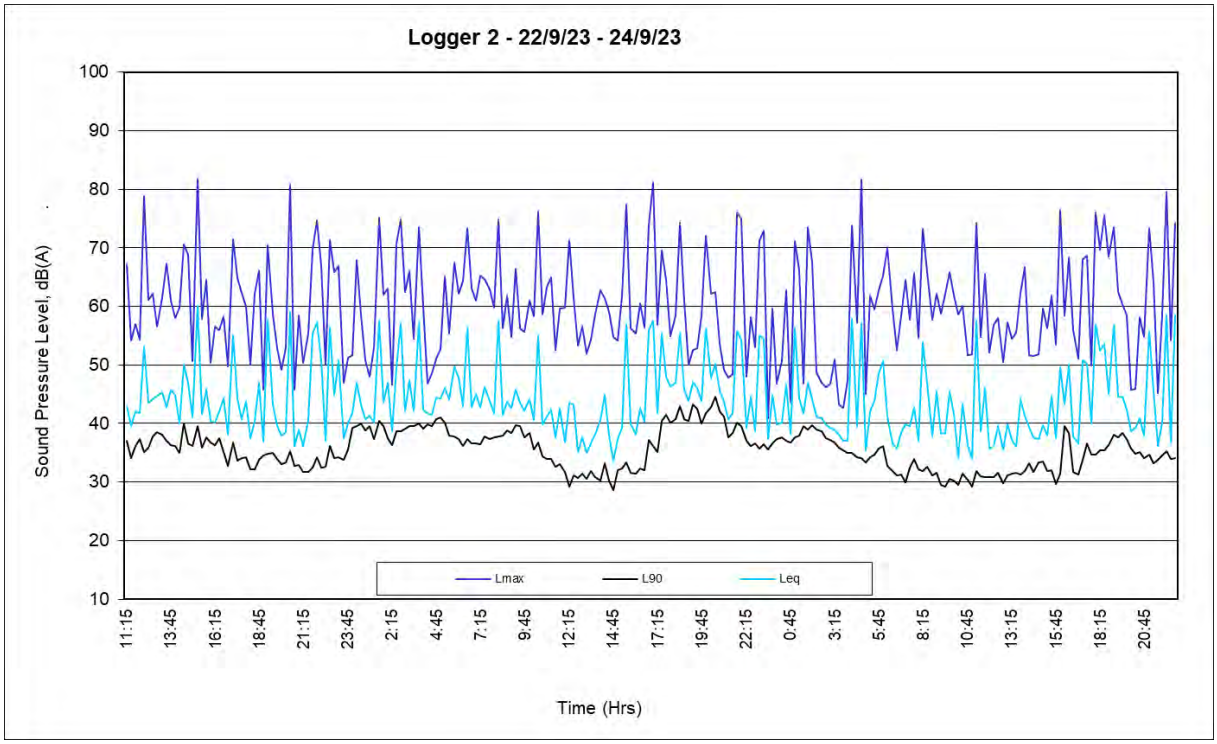


Ross Hodge *M.A.A.S.*
Acoustical Consultant

APPENDIX A
NOISE LOGGER CHARTS






Logger 2 - 22/9/23 - 24/9/23
Sound Pressure Level, dB(A)
100
90
80
70
60
50
40
30
20
10
Lmax
L90
Leq
11:15
13:45
16:15
18:45
21:15
23:45
2:15
4:45
7:15
9:45
12:15
14:45
17:15
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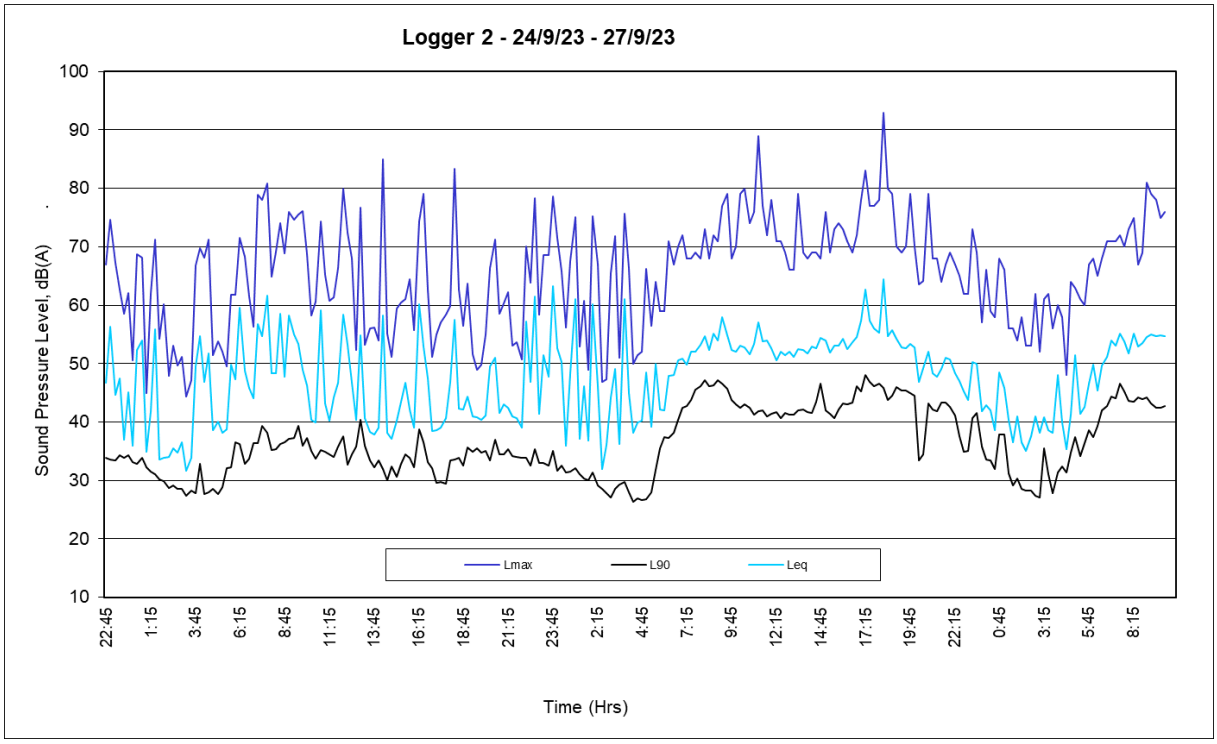
15:45
18:15
20:45
Time (Hrs)


Logger 2 - 24/9/23 - 27/9/23
Sound Pressure Level, dB(A)
100
90
80
70
60
50
40
30
20
10
Lmax
L90
Leq
22:45
1:15
3:45
6:15
8:45
11:15
13:45
16:15
18:45
21:15
23:45
2:15
4:45
7:15
9:45
12:15
14:45
17:15
19:45
22:15
0:45
3:15
5:45
8:15
Time (Hrs)

1 November 2023

Ref: 212176R/30152

Daracon Quarries Pty Ltd
PO Box 299
WALLSEND NSW 2287

RE: OCTOBER 2023 NOISE MONITORING RESULTS – ARDGLEN QUARRY

This letter report presents the results of attended and unattended noise monitoring conducted for the Ardglen Quarry (AQ) between Tuesday 17th and Friday 20th October, 2023. The monitoring was carried out to measure noise emissions from the operations of the quarry. Noise monitoring was carried out in accordance with the conditions of the AQ Noise Monitoring Plan (NMP) as detailed below.

NOISE CRITERIA

*The Proponent shall ensure that the noise generated by the project does not exceed the noise impact assessment criteria in **Table 1** at any residence on privately-owned land, or more than 25% of any privately owned land.*

Table 1
Noise Impact Assessment Criteria

Land	*Day*	*Evening*	*Night*	
	Leq (15 min)	*Leq (15 min)*	*Leq (15 min)*	*L1 (1 min)*
1 Burraston	*35*	*35*	*35*	*45*
3 Rose	*35*	*35*	*35*	*45*
4 C M Thompson	*44*	*35*	*35*	*45*
5 M Taylor	*45*	*35*	*35*	*45*
6 S Thompson	*45*	*35*	*35*	*45*
9 Bates	*37*	*35*	*35*	*45*
10 Avery	*38*	*35*	*35*	*45*
11 Shipman	*37*	*35*	*35*	*45*
12 Hall	*36*	*35*	*35*	*45*
13 McGhie	*35*	*35*	*35*	*45*
14 Purtell	*36*	*35*	*35*	*45*
15 J Taylor	*43*	*35*	*35*	*45*
16 Bojba	*40*	*35*	*35*	*45*
All other privately owned land	*35*	*35*	*35*	*45*

However, if the Proponent has a written negotiated noise agreement with any landowner of the land listed in Table 1, and a copy of this agreement has been forwarded to the Department and the DECCW, then the Proponent may exceed the noise limits in Table 1 in accordance with the negotiated agreement. The Proponent may also exceed the L1 (1 min) and Leq (15 min) noise impact criteria during out of hours rail loading activities provided they are conducted in accordance with Section 3, Condition 41 of the Project Approval (which is reproduced below).

> *41. The Proponent may only load a maximum of 2 trains outside the rail loading and distribution hours listed in Table 1 (of the Project Approval, being Monday to Sunday 7:00am to 10:00pm) in any 12 month period, unless agreed in writing by the Director General.*
>
> *Notes:*
>
> - *For information on the numbering and identification of properties used in this approval see Figure 2 on Page 14 of this Noise Monitoring Program).*
> - *To determine compliance with the LAeq (15 minute) noise limits, noise from the project is to be measured at the most affected point on or within the residential boundary, or at the most affected point within 30 metres of a dwelling (rural situations) where the dwelling is more than 30 metres from the boundary. Where it can be demonstrated that direct measurement of noise from the development is impractical, the DECCW may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.*
> - *To determine compliance with the L1 (1 minute) noise limits, noise from the project is to be measured 1m from the dwelling facade. Where it can be demonstrated that direct measurement of noise from the development is impractical, the DECCW may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy).*
> - *The noise emission limits identified in the above table apply under meteorological conditions of:*
>   - *wind speeds of up to 3 m/s at 10 metres above ground level; or*
>   - *Temperature inversion conditions of up to 3ºC/100m, and wind speeds of up to 2 m/s at 10 metres above ground level.*

NOISE MONITORING LOCATIONS

Noise measurement locations for the attended noise survey are listed below and shown in the accompanying **Figure 1**:

Location 4: C M Thompson
Location 13: McGhie
Location 14: Purtell
Location 16: Bojba

Figure 1 – Attended Noise Monitoring Locations

ATTENDED NOISE MEASUREMENTS

Noise emission levels were measured with a Brüel & Kjær Type 2250 Precision Sound Analyser. This instrument has Type 1 characteristics as defined in AS1259-1982 "Sound Level Meters". Calibration of the instrument was confirmed with a Brüel & Kjær Type 4231 Sound Level Calibrator prior to and at the completion of measurements.

Meteorological data used in this report was obtained from the wind rose for the period taken from the quarry operated weather station with real time observations made at the start of each 15 minute monitoring period (and confirmed with reference to the summary data provided by the proponent at the time of reporting). The weather throughout the survey was mild with clear skies. The wind speed was light from the west north west.

RESULTS OF ATTENDED MONITORING

The measured noise levels, over 1 second intervals, were analysed using Brüel & Kjær "*Evaluator*" software. The software enables the contributions of the quarry and other significant noise sources to the overall to be quantified.

Noise levels were recorded for each of the Leq (15 min), Lmax, L1, L10, L90 and Lmin percentiles. As shown in Table 1, the noise criterion for AQ during the day is based on an Leq noise level. The results, shown in **Table 2**, represent the total 15 minute Leq noise level for all noise sources and the relative contributions of each. Levels for the other percentiles are not shown as they have no compliance criteria for comparison but are available on request. The exception is the L1 (1 min) noise

level (which is the standard measure of sleep disturbance) which is applicable to noise emissions at night (i.e. between 10 pm and 7 am).

Table 2
Ardglen Quarry Noise Monitoring Results – 20th October 2023 (Day)

Location	Time	dB(A),L_{eq}	Wind speed/ direction˚	Identified Noise Sources
4. Thompson	11:40 am	38	2.1 m/s 321˚	Birds (36), traffic (32), AQ occasionally audible
13. McGhie	11:00 am	32	2.2 m/s 286˚	Birds (31), traffic (26), AQ inaudible
14. Purtell	11:20 am	41	1.8 m/s 300˚	Traffic (39), birds (32), AQ occasionally audible
16. Bojba	10:41 am	47	1.4 m/s 285˚	Traffic (46), birds (40), AQ inaudible

The results in Table 2 show that, under the meteorological and operating conditions at the time, the noise emissions from AQ were compliant with the relevant noise criteria at all monitoring locations.

At the time of the noise monitoring the following plant items were operational at the quarry;

- 1 x 30t Excavator,
- 1 x 30t dump truck,
- 1 x truck and dog carting material,
- 1 x 972 Front end loader,
- 1 x 2inch water pump running intermittently, and
- 1 x water trailer for dust suppression.

The noise from AQ was occasionally audible at locations 4 and 14. At these locations the noise was attributable to the general hum and occasional engine revs. The noise was not loud, or consistent, enough to be measured.

At locations 13 and 16 AQ was not audible.

The results of the noise monitoring programme have shown that AQ is operating within approved noise limits. No actions are recommended with respect to noise management at the Quarry.

UNATTENDED NOISE MEASUREMENTS

The NMP requires that unattended noise logging be undertaken over a period of three days, part of which coincides with the quarterly attended noise monitoring.

To measure the acoustic environment an ARL EL-315 environmental noise logger and an ARL Ngara environmental noise logger, were located as shown in Figure 2 from 17th to 20th October, 2023. **Table 3** shows a summary of the relevant measured data from the loggers which is also shown graphically in **Appendix A**.

TABLE 3 Measured Logger Noise Levels dB(A) – 17th to 20th October 2023						
Logger Location	Day (7am to 6pm)		Evening (6pm to 10 pm)		Night (10pm to 7am)	
	Leq	L90	Leq	L90	Leq	L90
Logger 1	50	34	53	37	52	33
Logger 2	54	37	55	41	54	37

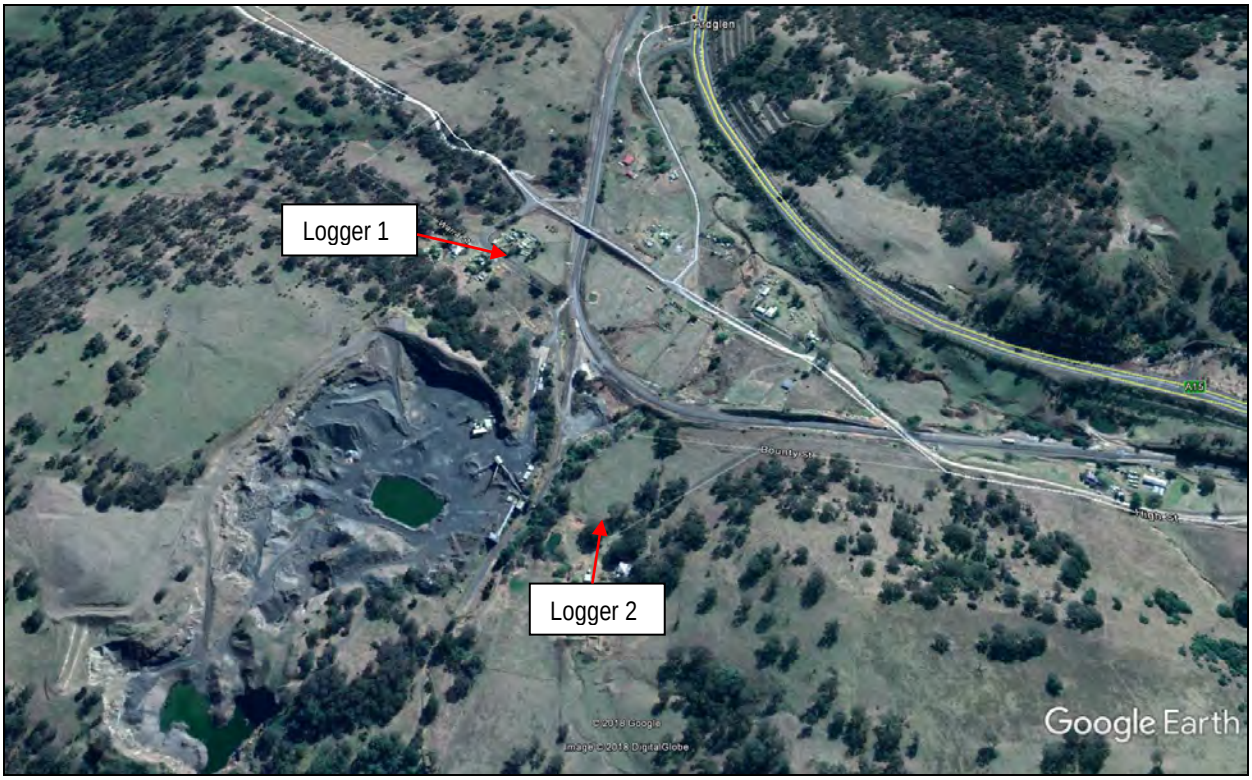


Figure 2 – Unattended Noise Monitoring Locations

The logger locations were chosen to be representative of the acoustic environment of the closest residences to the quarry and for security reasons.

Logger 1 was located on the fence at location R14. This is adjacent to the attended noise monitoring location for this residence.

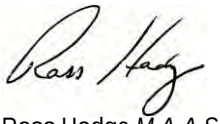
Logger 2 was in an open paddock north of the house.

The unattended noise loggers measure the total noise level in the environment, but the data cannot discriminate between various noise sources. As such, the data is presented here with no further analysis.

We trust this report fulfils your requirements at this time, however, should you require additional information or assistance please contact the undersigned on 0412 023 455.

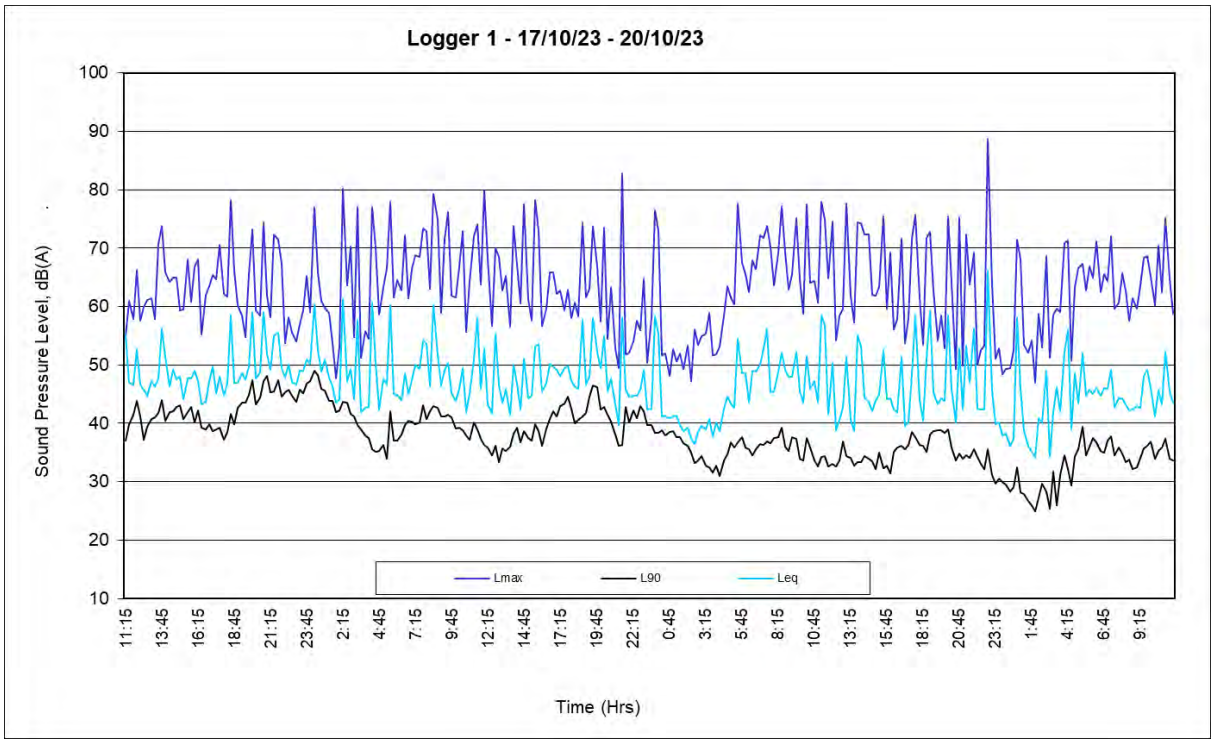
Yours faithfully,
SPECTRUM ACOUSTICS PTY LIMITED

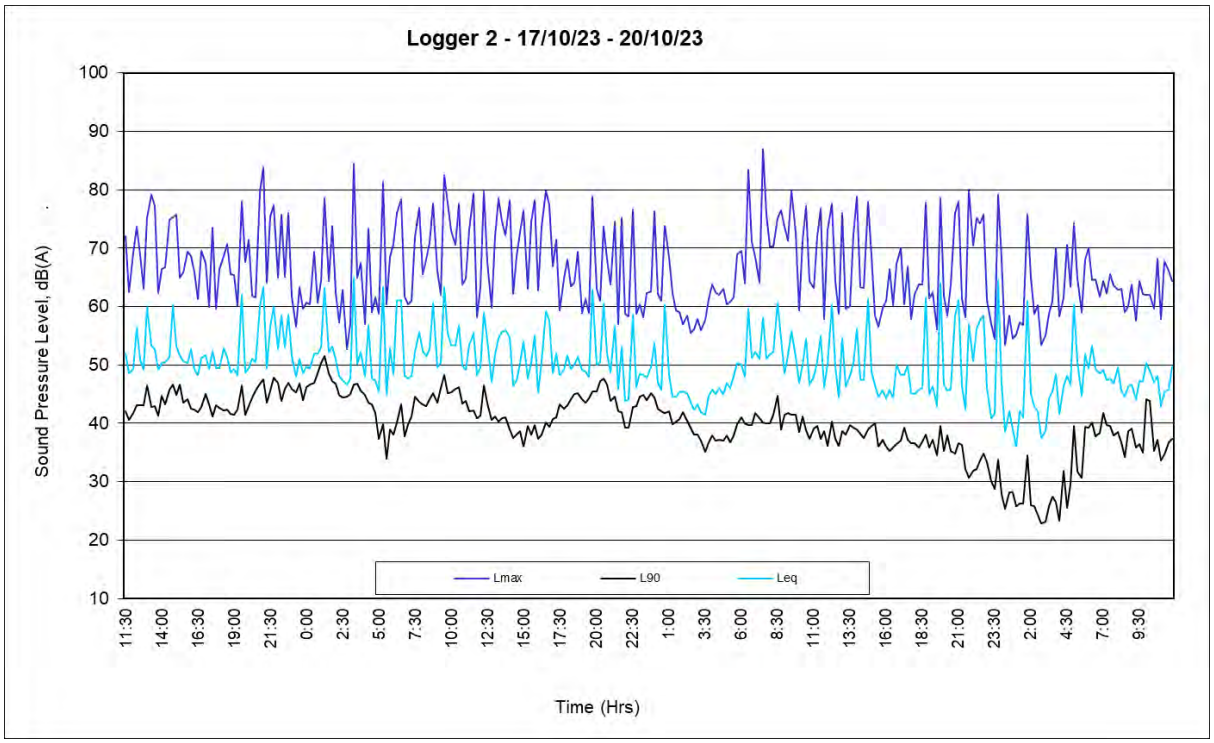
Author:



Ross Hodge *M.A.A.S.*
Acoustical Consultant

APPENDIX A
NOISE LOGGER CHARTS





9 January 2024

Ref: 10584/10170

Daracon Quarries Pty Ltd
PO Box 299
WALLSEND NSW 2287

RE: NOVEMBER 2023 NOISE MONITORING RESULTS – ARDGLEN QUARRY

This letter report presents the results of attended and unattended noise monitoring conducted for the Ardglen Quarry (AQ) between Friday 24th and Monday 27th November, 2023. The monitoring was carried out to measure noise emissions from the operations of the quarry. Noise monitoring was carried out in accordance with the conditions of the AQ Noise Monitoring Plan (NMP) as detailed below.

NOISE CRITERIA

*The Proponent shall ensure that the noise generated by the project does not exceed the noise impact assessment criteria in **Table 1** at any residence on privately-owned land, or more than 25% of any privately owned land.*

Table 1
Noise Impact Assessment Criteria

Land	*Day*	*Evening*	*Night*	
	Leq (15 min)	*Leq (15 min)*	*Leq (15 min)*	*L1 (1 min)*
1 Burraston	*35*	*35*	*35*	*45*
3 Rose	*35*	*35*	*35*	*45*
4 C M Thompson	*44*	*35*	*35*	*45*
5 M Taylor	*45*	*35*	*35*	*45*
6 S Thompson	*45*	*35*	*35*	*45*
9 Bates	*37*	*35*	*35*	*45*
10 Avery	*38*	*35*	*35*	*45*
11 Shipman	*37*	*35*	*35*	*45*
12 Hall	*36*	*35*	*35*	*45*
13 McGhie	*35*	*35*	*35*	*45*
14 Purtell	*36*	*35*	*35*	*45*
15 J Taylor	*43*	*35*	*35*	*45*
16 Bojba	*40*	*35*	*35*	*45*
All other privately owned land	*35*	*35*	*35*	*45*

However, if the Proponent has a written negotiated noise agreement with any landowner of the land listed in Table 1, and a copy of this agreement has been forwarded to the Department and the DECCW, then the Proponent may exceed the noise limits in Table 1 in accordance with the negotiated agreement. The Proponent may also exceed the L1 (1 min) and Leq (15 min) noise impact criteria during out of hours rail loading activities provided they are conducted in accordance with Section 3, Condition 41 of the Project Approval (which is reproduced below).

> *41. The Proponent may only load a maximum of 2 trains outside the rail loading and distribution hours listed in Table 1 (of the Project Approval, being Monday to Sunday 7:00am to 10:00pm) in any 12 month period, unless agreed in writing by the Director General.*
>
> *Notes:*
>
> - *For information on the numbering and identification of properties used in this approval see Figure 2 on Page 14 of this Noise Monitoring Program).*
> - *To determine compliance with the LAeq (15 minute) noise limits, noise from the project is to be measured at the most affected point on or within the residential boundary, or at the most affected point within 30 metres of a dwelling (rural situations) where the dwelling is more than 30 metres from the boundary. Where it can be demonstrated that direct measurement of noise from the development is impractical, the DECCW may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.*
> - *To determine compliance with the L1 (1 minute) noise limits, noise from the project is to be measured 1m from the dwelling facade. Where it can be demonstrated that direct measurement of noise from the development is impractical, the DECCW may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy).*
> - *The noise emission limits identified in the above table apply under meteorological conditions of:*
>   - *wind speeds of up to 3 m/s at 10 metres above ground level; or*
>   - *Temperature inversion conditions of up to 3ºC/100m, and wind speeds of up to 2 m/s at 10 metres above ground level.*

NOISE MONITORING LOCATIONS

Noise measurement locations for the attended noise survey are listed below and shown in the accompanying **Figure 1**:

Location 4: C M Thompson
Location 13: McGhie
Location 14: Purtell
Location 16: Bojba

Figure 1 – Attended Noise Monitoring Locations

ATTENDED NOISE MEASUREMENTS

Noise emission levels were measured with a Brüel & Kjær Type 2250 Precision Sound Analyser. This instrument has Type 1 characteristics as defined in AS1259-1982 "Sound Level Meters". Calibration of the instrument was confirmed with a Brüel & Kjær Type 4231 Sound Level Calibrator prior to and at the completion of measurements.

Meteorological data used in this report was obtained from the quarry operated weather station with real time observations made at the start of each 15 minute monitoring period (and confirmed with reference to the summary data provided by the proponent at the time of reporting). The weather throughout the survey was mild with clear skies. The wind speed was light to moderate and generally from the north to west.

RESULTS OF ATTENDED MONITORING

The measured noise levels, over 1 second intervals, were analysed using Brüel & Kjær "*Evaluator*" software. The software enables the contributions of the quarry and other significant noise sources to the overall to be quantified.

Noise levels were recorded for each of the Leq (15 min), Lmax, L1, L10, L90 and Lmin percentiles. As shown in Table 1, the noise criterion for AQ during the day is based on an Leq noise level. The results, shown in **Table 2**, represent the total 15 minute Leq noise level for all noise sources and the relative contributions of each. Levels for the other percentiles are not shown as they have no compliance criteria for comparison but are available on request. The exception is the L1 (1 min) noise

level (which is the standard measure of sleep disturbance) which is applicable to noise emissions at night (i.e. between 10 pm and 7 am).

Table 2
Ardglen Quarry Noise Monitoring Results – 27th November 2023 (Day)

Location	Time	dB(A),L_{eq}	Wind speed/ direction°	Identified Noise Sources
4. Thompson	1:07pm	53	2.4 / 011	Train (52), traffic (44), birds (42), **AQ occasionally audible**
13. McGhie	2:03pm	37	2.8 / 108	Birds (34), dogs (32), traffic (28), **AQ inaudible**
14. Purtell	1:41pm	58	2.6 / 298	Traffic (58), birds (43), **AQ inaudible**
16. Bojba	12:46pm	57	0.9 / 268	Traffic (57), birds (35), **AQ inaudible**

The results in Table 2 show that, under the meteorological and operating conditions at the time, the noise emissions from AQ were compliant with the relevant noise criteria at all monitoring locations.

At the time of the noise monitoring the following plant items were operational at the quarry;

- 1x Cat 972 loader;
- 1x Komatsu 30t dump truck;
- 1x Volvo 35t Excavator;
- 3x rigid trucks and 30 truck and dog movements for the day;
- 1x hilux ute with a trailer mounted water cart operating;
- 1x 2" water pump running intermittently;
- 2x Generators.

The noise from AQ was occasionally audible at location 4. At this location the noise was attributable to the general hum and occasional engine revs. The noise was not loud, or consistent, enough to be measured.

At locations 13, 14 and 16 AQ was not audible.

The results of the noise monitoring programme have shown that AQ is operating within approved noise limits. No actions are recommended with respect to noise management at the Quarry.

UNATTENDED NOISE MEASUREMENTS

The NMP requires that unattended noise logging be undertaken over a period of three days, part of which coincides with the quarterly attended noise monitoring.

To measure the acoustic environment an ARL EL-315 environmental noise logger and an ARL Ngara environmental noise logger, were located as shown in Figure 2 from 24th to 27th November, 2023 (which includes a weekend). **Table 3** shows a summary of the relevant measured data from the

loggers which is also shown graphically in **Appendix A**. Note that the summary data presented in Table 3 is excludes the weekend period, whilst the graphical data is for the entire monitoring period.

TABLE 3
Measured Logger Noise Levels dB(A) – 24th to 27th November 2023

Logger Location	Day (7am to 6pm)		Evening (6pm to 10 pm)		Night (10pm to 7am)	
	Leq	L90	Leq	L90	Leq	L90
Logger 1	48	36	50	37	50	38
Logger 2	56	41	45	36	43	37

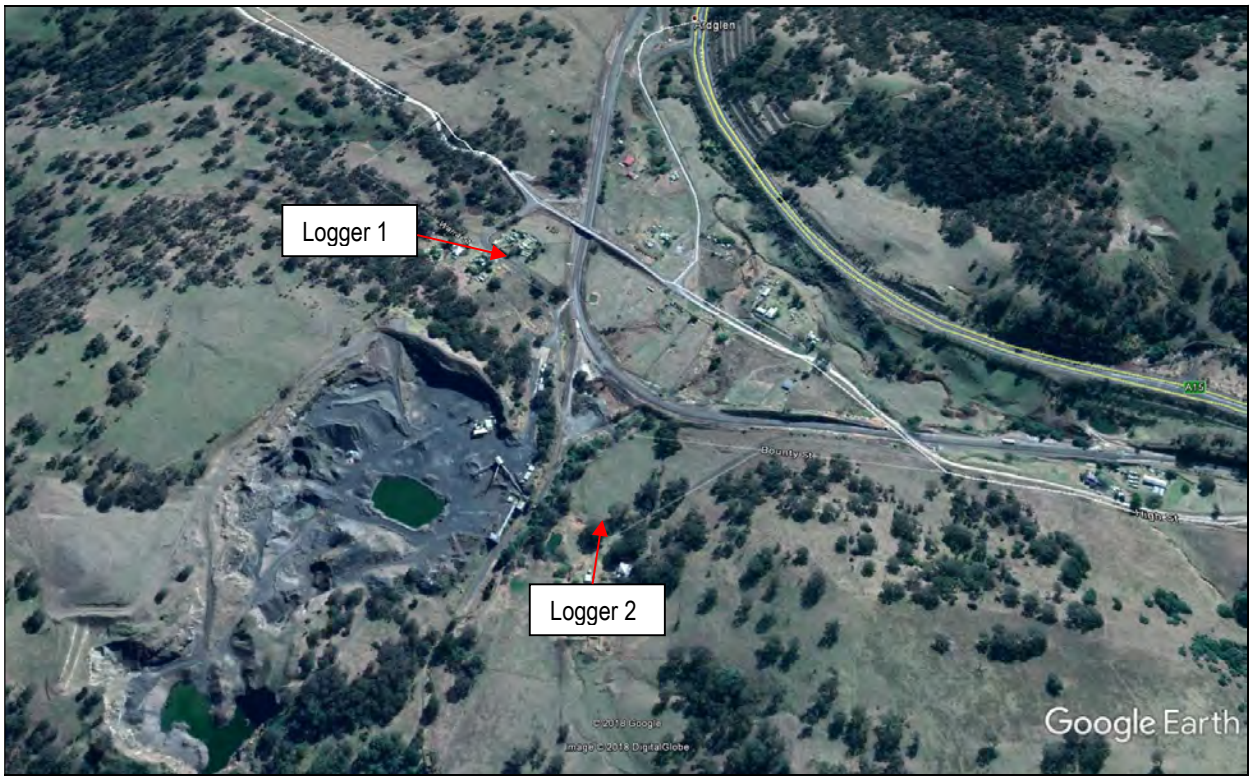


Figure 2 – Unattended Noise Monitoring Locations

The logger locations were chosen to be representative of the acoustic environment of the closest residences to the quarry and for security reasons.

Logger 1 was located on the fence at location R14. This is adjacent to the attended noise monitoring location for this residence.

Logger 2 was in an open paddock north of the house.

The unattended noise loggers measure the total noise level in the environment, but the data cannot discriminate between various noise sources. As such, the data is presented here with no further analysis.

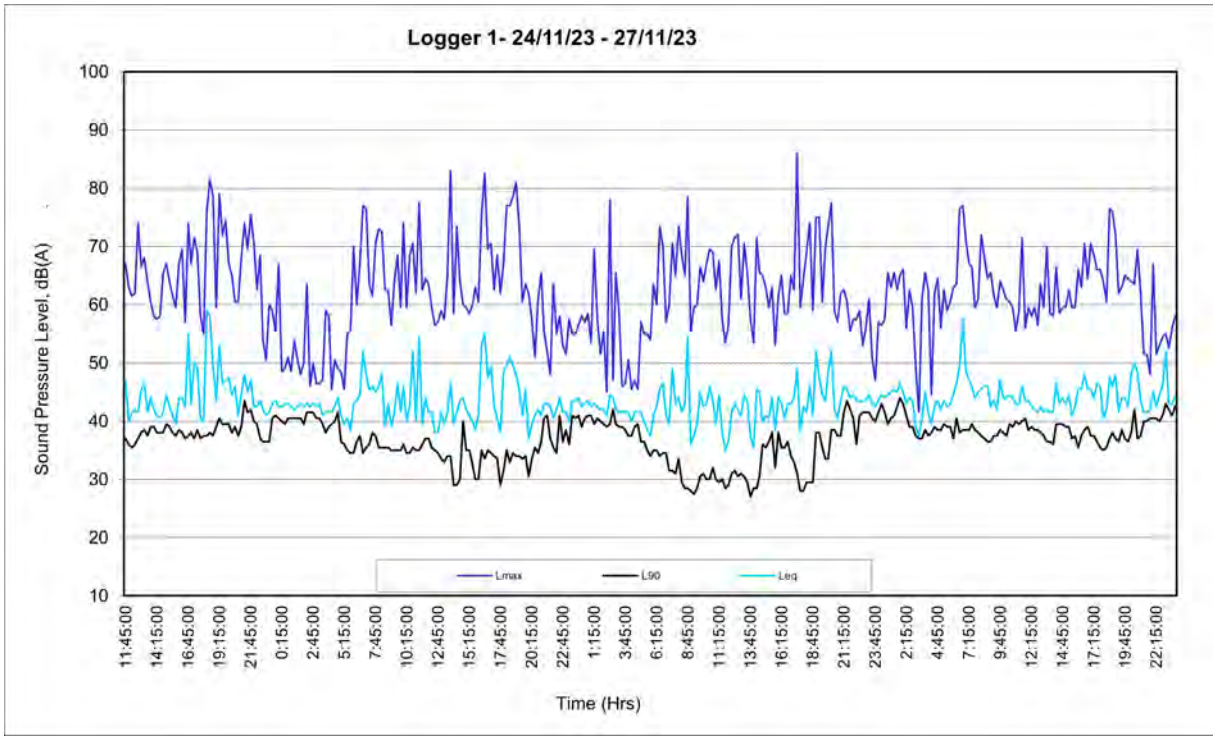
We trust this report fulfils your requirements at this time, however, should you require additional information or assistance please contact the undersigned on 0412 023 455.

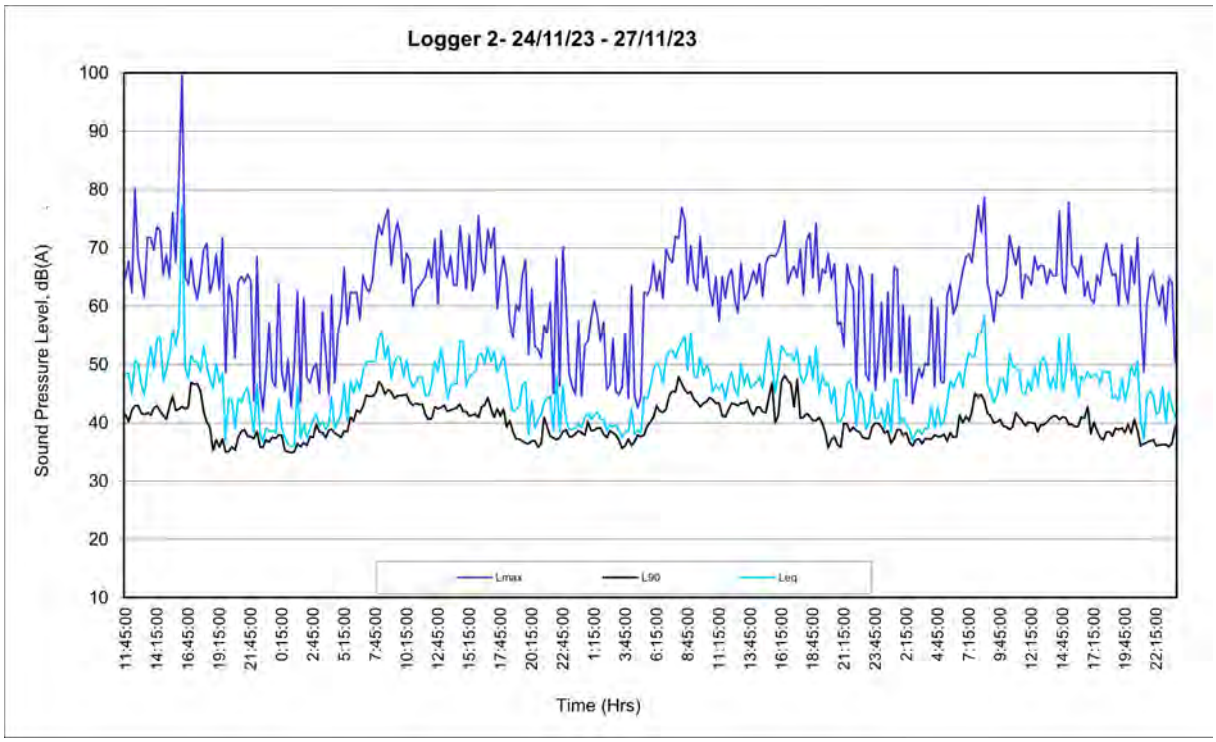
Yours faithfully,
SPECTRUM ACOUSTICS PTY LIMITED

Author:

Neil Pennington MAIP, MAAS, MASA
B. Sc., B.Math. (Hons)
Principal / Director

APPENDIX A
NOISE LOGGER CHARTS





5 February 2024

Ref: 10584/10205

Daracon Quarries Pty Ltd
PO Box 299
WALLSEND NSW 2287

RE: DECEMBER 2023 NOISE MONITORING RESULTS – ARDGLEN QUARRY

This letter report presents the results of attended and unattended noise monitoring conducted for the Ardglen Quarry (AQ) between Monday 18th and Thursday 21st December, 2023. The monitoring was carried out to measure noise emissions from the operations of the quarry. Noise monitoring was carried out in accordance with the conditions of the AQ Noise Monitoring Plan (NMP) as detailed below.

NOISE CRITERIA

*The Proponent shall ensure that the noise generated by the project does not exceed the noise impact assessment criteria in **Table 1** at any residence on privately-owned land, or more than 25% of any privately owned land.*

Table 1
Noise Impact Assessment Criteria

Land	*Day*	*Evening*	*Night*	
	Leq (15 min)	*Leq (15 min)*	*Leq (15 min)*	*L1 (1 min)*
1 Burraston	*35*	*35*	*35*	*45*
3 Rose	*35*	*35*	*35*	*45*
4 C M Thompson	*44*	*35*	*35*	*45*
5 M Taylor	*45*	*35*	*35*	*45*
6 S Thompson	*45*	*35*	*35*	*45*
9 Bates	*37*	*35*	*35*	*45*
10 Avery	*38*	*35*	*35*	*45*
11 Shipman	*37*	*35*	*35*	*45*
12 Hall	*36*	*35*	*35*	*45*
13 McGhie	*35*	*35*	*35*	*45*
14 Purtell	*36*	*35*	*35*	*45*
15 J Taylor	*43*	*35*	*35*	*45*
16 Bojba	*40*	*35*	*35*	*45*
All other privately owned land	*35*	*35*	*35*	*45*

However, if the Proponent has a written negotiated noise agreement with any landowner of the land listed in Table 1, and a copy of this agreement has been forwarded to the Department and the DECCW, then the Proponent may exceed the noise limits in Table 1 in accordance with the negotiated agreement. The Proponent may also exceed the L1 (1 min) and Leq (15 min) noise impact criteria during out of hours rail loading activities provided they are conducted in accordance with Section 3, Condition 41 of the Project Approval (which is reproduced below).

> *41. The Proponent may only load a maximum of 2 trains outside the rail loading and distribution hours listed in Table 1 (of the Project Approval, being Monday to Sunday 7:00am to 10:00pm) in any 12 month period, unless agreed in writing by the Director General.*
>
> *Notes:*
>
> - *For information on the numbering and identification of properties used in this approval see Figure 2 on Page 14 of this Noise Monitoring Program).*
> - *To determine compliance with the LAeq (15 minute) noise limits, noise from the project is to be measured at the most affected point on or within the residential boundary, or at the most affected point within 30 metres of a dwelling (rural situations) where the dwelling is more than 30 metres from the boundary. Where it can be demonstrated that direct measurement of noise from the development is impractical, the DECCW may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.*
> - *To determine compliance with the L1 (1 minute) noise limits, noise from the project is to be measured 1m from the dwelling facade. Where it can be demonstrated that direct measurement of noise from the development is impractical, the DECCW may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy).*
> - *The noise emission limits identified in the above table apply under meteorological conditions of:*
>   - *wind speeds of up to 3 m/s at 10 metres above ground level; or*
>   - *Temperature inversion conditions of up to 3ºC/100m, and wind speeds of up to 2 m/s at 10 metres above ground level.*

NOISE MONITORING LOCATIONS

Noise measurement locations for the attended noise survey are listed below and shown in the accompanying **Figure 1**:

Location 4: C M Thompson
Location 13: McGhie
Location 14: Purtell
Location 16: Bojba

Figure 1 – Attended Noise Monitoring Locations

ATTENDED NOISE MEASUREMENTS

Noise emission levels were measured with a Brüel & Kjær Type 2250 Precision Sound Analyser. This instrument has Type 1 characteristics as defined in AS1259-1982 "Sound Level Meters". Calibration of the instrument was confirmed with a Brüel & Kjær Type 4231 Sound Level Calibrator prior to and at the completion of measurements.

Meteorological data used in this report was obtained from the quarry operated weather station with real time observations made at the start of each 15 minute monitoring period (and confirmed with reference to the summary data provided by the proponent at the time of reporting). The weather throughout the survey was mild with clear skies. The wind speed was moderate and generally from the southeast.

RESULTS OF ATTENDED MONITORING

The measured noise levels, over 1 second intervals, were analysed using Brüel & Kjær "*Evaluator*" software. The software enables the contributions of the quarry and other significant noise sources to the overall to be quantified.

Noise levels were recorded for each of the Leq (15 min), Lmax, L1, L10, L90 and Lmin percentiles. As shown in Table 1, the noise criterion for AQ during the day is based on an Leq noise level. The results, shown in **Table 2**, represent the total 15 minute Leq noise level for all noise sources and the relative contributions of each. Levels for the other percentiles are not shown as they have no compliance criteria for comparison but are available on request. The exception is the L1 (1 min) noise

level (which is the standard measure of sleep disturbance) which is applicable to noise emissions at night (i.e. between 10 pm and 7 am).

Table 2
Ardglen Quarry Noise Monitoring Results – 21st December 2023 (Day)

Location	Time	dB(A),L_{eq}	Wind speed/ direction°	Identified Noise Sources
4. Thompson	10:22am	51	4.1 / 146	Traffic (50), birds (45), **AQ inaudible**
13. McGhie	10:40am	49	4.8 / 128	Train (49), traffic (38), birds (27), **AQ inaudible**
14. Purtell	11:00am	56	4.8 / 144	Traffic (55), train (50), birds (37), **AQ inaudible**
16. Bojba	9:59am	56	3.3 / 113	Traffic (56), birds (34), **AQ inaudible**

The results in Table 2 show that, under the meteorological and operating conditions at the time, the noise emissions from AQ were compliant with the relevant noise criteria at all monitoring locations.

At the time of the noise monitoring the following plant items were operational at the quarry;

- 1 x 35t Excavator
- 1 x 972 Front end loader
- 1 x Generator
- 1 x Water truck
- 1 x 2" water pump running intermittently
- 1 x 12t Excavator

The noise from AQ was not audible at any of the monitoring locations.

The results of the noise monitoring programme have shown that AQ is operating within approved noise limits. No actions are recommended with respect to noise management at the Quarry.

UNATTENDED NOISE MEASUREMENTS

The NMP requires that unattended noise logging be undertaken over a period of three days, part of which coincides with the quarterly attended noise monitoring.

To measure the acoustic environment an ARL EL-315 environmental noise logger and an ARL Ngara environmental noise logger, were located as shown in Figure 2 from 18th to 21st December, 2023. **Table 3** shows a summary of the relevant measured data from the loggers which is also shown graphically in **Appendix A**.

TABLE 3 Measured Logger Noise Levels dB(A) – 18th to 21st December 2023						
Logger Location	Day (7am to 6pm)		Evening (6pm to 10 pm)		Night (10pm to 7am)	
	Leq	L90	Leq	L90	Leq	L90
Logger 1	56	44	53	39	49	32
Logger 2	55	34	51	34	50	30

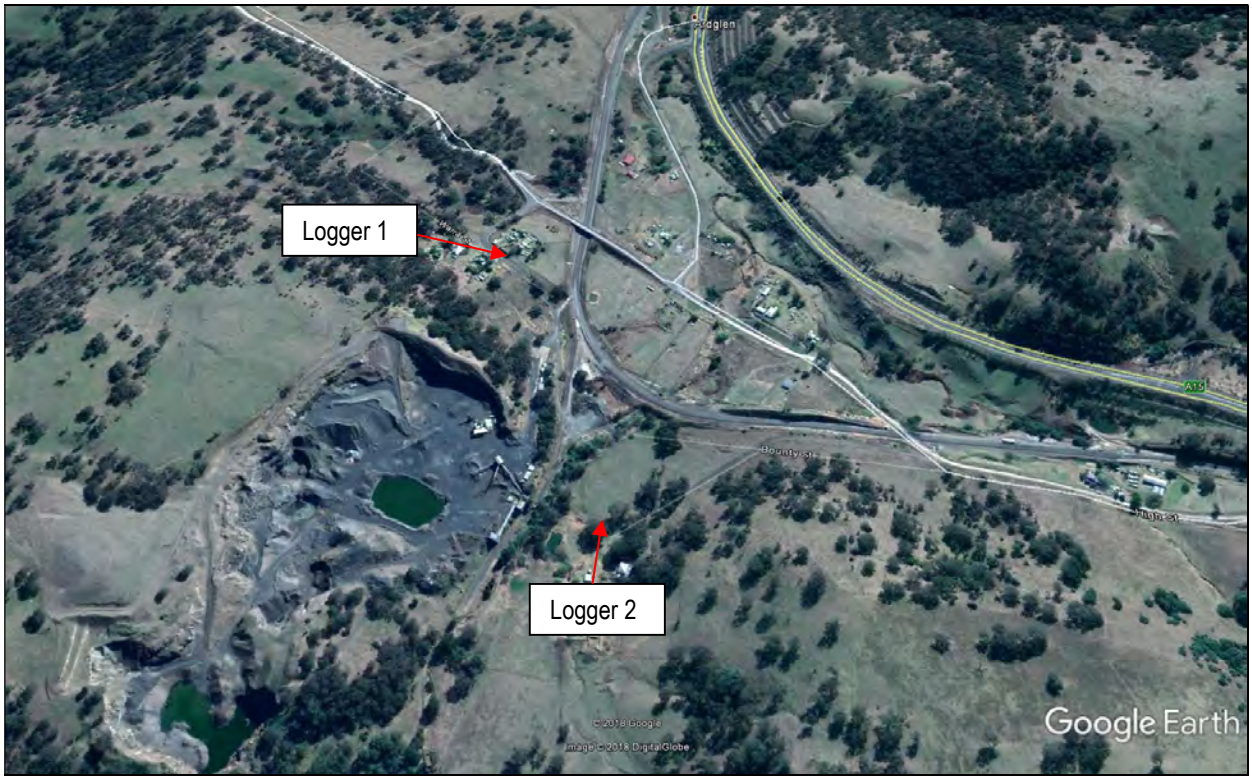


Figure 2 – Unattended Noise Monitoring Locations

The logger locations were chosen to be representative of the acoustic environment of the closest residences to the quarry and for security reasons.

Logger 1 was located on the fence at location R14. This is adjacent to the attended noise monitoring location for this residence.

Logger 2 was in an open paddock north of the house.

The unattended noise loggers measure the total noise level in the environment, but the data cannot discriminate between various noise sources. As such, the data is presented here with no further analysis.

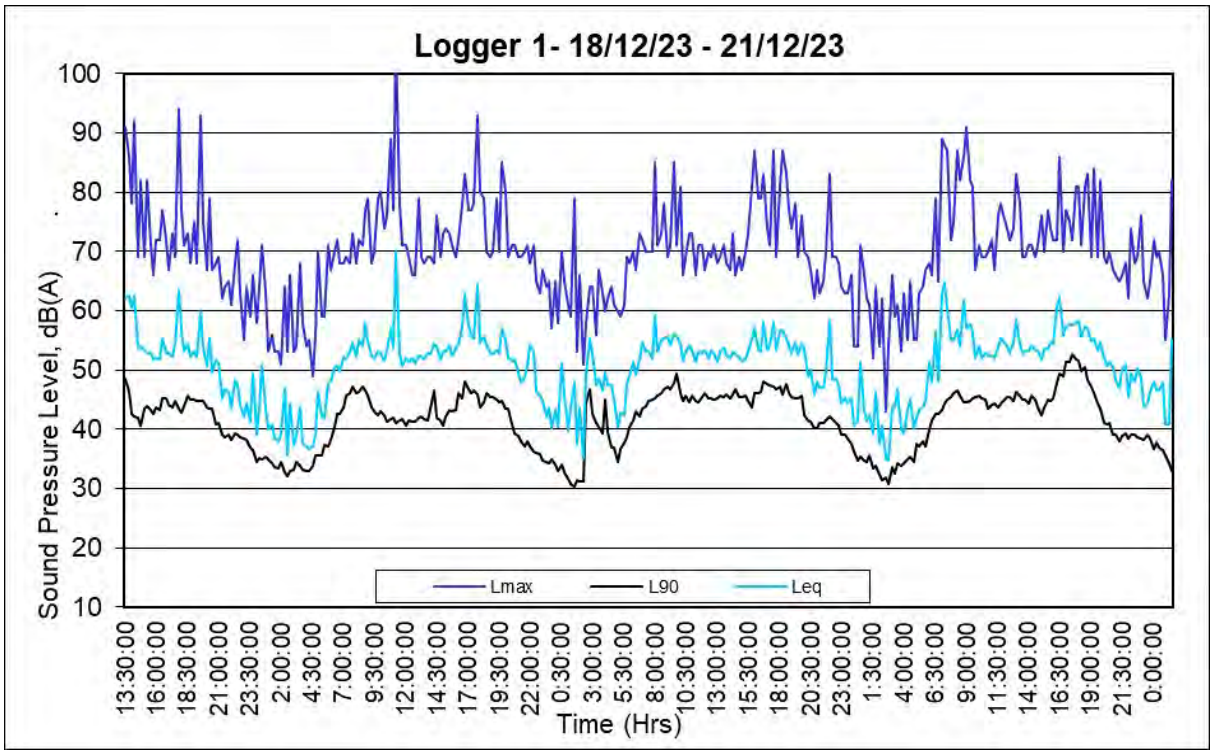
We trust this report fulfils your requirements at this time, however, should you require additional information or assistance please contact the undersigned on 0412 023 455.

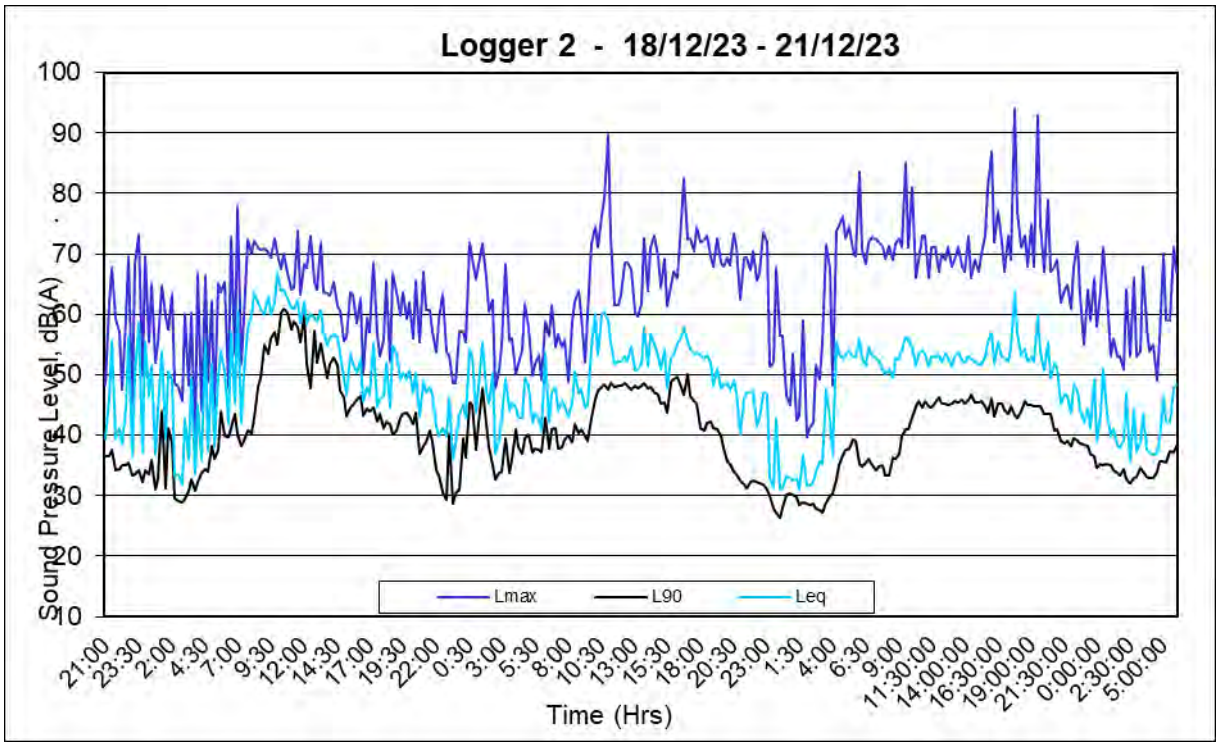
Yours faithfully,
SPECTRUM ACOUSTICS PTY LIMITED

Author:

Neil Pennington MAIP, MAAS, MASA
B. Sc., B.Math. (Hons)
Principal / Director

APPENDIX A
NOISE LOGGER CHARTS





Appendix 3 2023 Community Consultative Committee Meeting Minutes

MINUTES OF ARDGLEN QUARRY COMMUNITY CONSULTATIVE COMMITTEE (CCC)

Tuesday, 5 May 2023 at Murrurundi Library, Murrurundi commencing at 9.32 am

Attendees	**Initials**	**Position**
Michael Silver OAM	MJS	Independent Chairperson
Delma Ross	DR	Community Member
William Avery	WA	Community Member
Penny Dalton	PD	Community Member
Megan Taylor	MT	Community Member
Luke Robinson	LR	Systems Manager – Construction Materials, Daracon Group
Nathan Skelly	NS	Acting General Manager, Liverpool Plains Shire Council
Observers		
John Cannon	JC	Divisional Manager - Construction Materials, Daracon Group
Geoff Reeves	GR	Ardglen Quarry Site Manager - Construction Materials, Daracon Group
Apologies		
Christine Thompson Crown Lands Office (Tamworth)	CT	Community Member

Item	**Details and Actions**
1.0 Welcome and Introductions	Michael Silver welcomed all present. He extended a welcome to Penny Dalton and Nathan Skelly attending their first meeting since he assumed the Chair.
2.0 Acknowledgement of Country	The Chair acknowledged the Traditional Owners of the land on which the meeting is being held and recognised their continuing connection to land, waters, and culture, paying respects to their Elders past, present and emerging.
3.0 Declarations of Interest	• MJS declared that his expenses as Independent Chairperson are borne by the proponent. • MJS noted that there were no declarations of pecuniary or other conflict of interests from Community Members.
4.0 Correspondence	• Post Meeting Communications – Following the CCC meeting held on the 1 November 2023 it was raised to the CCC Chair by a member of the CCC that some of the more general discussion at the meeting relating to the Ardglen locality had caused some angst. As a result, the Chair and Daracon noted that the CCC meeting will only focus on Ardglen quarry related matters, and any discussion outside the boundaries of the quarry site or not associated with its operation will

	not occur in this forum. Daracon apologise for any angst that may have been caused from these more general discussions.
5.0 Previous Meeting	• It was noted that the minutes of the meeting of 1 November 2022 were approved on 28 November 2022. • No Business Arising
6.0 Action Items	• That Daracon to provide a copy of the access road widening design drawing to the CCC. **Completed**
7.0 Proponent's Report	• Luke Robinson presented the Proponent's Presentation. *(Copy attached to the Minutes)* • LR provided an historical overview of the quarry and a summary of the quarry's status. He noted that Modification 2 was approved on 16 March 2021, but no works have commenced in the extension area. Environmental monitoring, general maintenance together with relevant actions required by the Modification 2 consent have been the primary focus. • LR advised that Geoff Reeves has been appointed to the role of Site Manager. • LR spoke to the Dust Deposition Gauges tables in the presentation noting that the site is not operating with the rolling annual averages being well below the annual average criteria standards. • In terms of Noise Monitoring, LR advised that noise monitoring is undertaken by Spectrum Acoustics. He highlighted that Modification 2 now only requires noise monitoring to occur when the quarry is operating. Similarly, no blasting has occurred with no consequential monitoring required. • LR advised that in respect of flora and fauna, advised that weed spraying has been severely hindered by wet weather. He also highlighted ongoing issues with feral animal control. • LR advised that there have been no incidents or complaints reported since the last meeting. • LR advised that significant rehabilitation had been undertaken recently in accordance with the Landscape Management Plan. On going regular inspections of the rehabilitated areas is undertaken with a good outcome from tree planting in 2019. 2020 and 2021. The Committee noted photographs of tree planting. • LR outlined the proposed works for 2023. He advised environmental monitoring (air quality, noise, and water) will continue. There will be ongoing maintenance works consistent with the Landscape Management Plan. • Potential supply of previously quarried material to certain local projects will be considered. Preparatory site and construction works will be undertaken to facilitate the quarry's return to operational status. • LR advised that several relevant actions associated with the revised consent under Modification 2 are being addressed. He noted that the road upgrade works had been completed in association with

	Liverpool Plains Shire Council. There was general concurrence within the Committee that the road works was a good outcome. PD expressed some concern regarding the notification process associated with closing the road. LR indicated that a letter-box drop was undertaken – unfortunately it may have been that some letter boxes were missed. WA sought clarification as to any future maintenance and remedial works on the haulage road. LR advised this would be the responsibility of Daracon. He further advised that drivers of haulage vehicles moving through Ardglen will be required to adhere to a 40km/hr speed limit. PD questioned who was responsible for upgrade works in High Street. LR advised these works were the responsibility of Liverpool Plains Shire Council. • LR noted several Management Plans are still subject to assessment by the DPE – in particular work is continuing on finalising the Groundwater Management Plan. He advised that it is not proposed to commence quarrying in the extension area until all conditions of consent under Modification 2 have been addressed. LR indicated that the CCC and the community will be updated on progress of quarry related activities. • NS enquired when Daracon hoped to resume quarrying operations. LR suggested that it potentially maybe in late 2023. • LR provided an overview of the 2022 Independent Environmental Audit (IEA) by James Bailey & Associates. He advised that following submission of response actions by Daracon and further input from DPE, the report was accepted by DPE. The IEA report is available on the Ardglen Quarry website at https://daracon.com.au/services/quarries • LR also informed the CCC that all relevant documents associated with the IEA and Annual Reports (excluding 2022 as it's not yet approved by DPE) were available on the website, but if anyone wanted a printed copy of the IEA, annual report or other document, then please let LR know and we'll deliver them to you.
8.0 Other Agenda Items	• Questions from PD ***1.*** What are the processes for management of the water control system and catchment? Our creek is no longer running and drying up; this has not happened before the commencement of operations. Normally after a day of rain it is flowing, however something must be catching it or blocking it. ***Response: Daracon have several water quality dams on site, but nothing that's been done on site could have changed the flow of the creek. The reduced creek flow may be caused by many other factors unrelated to the quarry operation.***

	2. Where does the run-off from the water used go to? Is it contaminated, as we have more than 20 animals that rely on that water? (Your workers are extremely on the ball though, dust for two seconds and they were already onto it, no effect to me, but awesome work). ***Response: The water from site is contained within the site water quality dams and Daracon is not aware of any contamination issues.*** ***3.*** Has the EPA provided any reports that can be presented. ***Response: The Environmental Management Plan for the site is being finalised and Daracon is required to report in response to the standards set out in this plan.*** 4. What are the latest approved hours of operation of the quarry? ***Response the following table is extracted from the consent to the modification.*** **HOURS OF OPERATION** 1. The Applicant must comply with the hours of operation in Table 1. *Table 1: Hours of Operation* **Activity** / **Day** / **Time** Topsoil/overburden removal/emplacement: Monday-Saturday: 7.00am to 5.00pm; Sunday: None Blasting: Monday-Friday: 10:00am to 3.00pm; Saturdays, Sundays and Public Holidays: None In-pit activities (including drilling, extraction, and transfer of material out of the pit): Monday-Saturday: 7.00am to 5:30pm; Sundays and Public Holidays: None Out-of-pit activities (including processing, and stockpiling): Monday-Saturday: 7.00am to 5:30pm; Sundays and Public Holidays: None Maintenance (if inaudible at nearby residences): Monday-Sunday: Any time Truck loading and distribution: Monday-Saturday: 6.30am to 5.30pm; Sundays and Public Holidays: None Rail loading: Monday-Sunday: 7:00am to 10:00pm *Note:* • *The Applicant may load no more than 2 trains each year outside the hours listed in Table 1 (see condition 41).* • *The Applicant may carry out blasting operations outside the hours listed in Table 1 for safety reasons provided the Applicant has notified EPA and the local community about the proposed blast.*
9.0 General Business	• PD enquired as to how residents will know when blasting will occur in the quarry. LR responded that within the consent there is a requirement for a Blast Notification List to be maintained. He indicated that he would place PD on this list and if anyone else wanted to be notified of future blasts to let GR or LR know.
10.0 Next Meeting	• Proposed for October/November 2023 – date to be confirmed

Meeting closed at 10.29 am.
MJS thanked all present for their attendance.

Meeting Minutes Approved:

Michael J Silver OAM
Independent Chair

Date: 25 May 2023

MINUTES OF ARDGLEN QUARRY COMMUNITY CONSULTATIVE COMMITTEE (CCC)

Tuesday, 14 November 2023 at Murrurundi Library, Murrurundi commencing at 9.35am

Attendees	Initials	Position
Michael Silver OAM	MJS	Independent Chairperson
Delma Ross	DR	Community Member
William Avery	WA	Community Member
Christine Thompson	CT	Community Member
Luke Robinson	LR	Systems Manager – Construction Materials, Daracon Group

Observers

John Cannon	JC	Divisional Manager - Construction Materials, Daracon Group
Geoff Phillips	GP	Crown Lands (Tamworth)

Apologies

Penny Dalton	PD	Community Member
Megan Taylor	MT	Community Member
Nathan Skelly	NS	Director Infrastructure Services, Liverpool Plains Shire Council

Item	Details and Actions
1.0 Welcome and Introductions	Michael Silver welcomed all present.
2.0 Acknowledgement of Country	The Chair acknowledged the Traditional Owners of the land on which the meeting is being held and recognised their continuing connection to land, waters, and culture, paying respects to their Elders past, present and emerging.
3.0 Declarations of Interest	• MJS declared that his expenses as Independent Chairperson are borne by the proponent. • MJS noted that there were no declarations of pecuniary or other conflict of interests from Community Members.
4.0 Correspondence	• Nil
5.0 Previous Meeting	• It was noted that the minutes of the meeting of 5 May 2023 were approved on 25 May 2023. • No Business Arising
6.0 Proponent's Report	• Luke Robinson presented the Proponent's Presentation. *(Copy attached to the Minutes)* • LR provided an historical overview of the quarry and the current status of the site. He advised that there has been no works on the extension area, with the only

	activity being the supply of existing material for some key projects and local Councils. • LR outlined amendments to weighbridge layout (refer photographs). WA highlighted potential slippage issues in the vicinity of the weighbridge. LR indicated Daracon was cognisant of this issue. • LR also detailed the new wheel wash facility. • LR stepped the Committee through recent works associated with the quarry stockyard, noting that there is over 10,000 ton of scalps and gabion rock onsite. He outlined work underway on the tertiary surface water management basin. JC added that there is still some work to be completed on the basin. CT questioned the purpose of the basin. LR explained that it is part of the overall water management system for the site and is the final "settling pond". • CT questioned the safety and condition of light poles on the site, noting several are not plumb. LR advised there is no electricity connected on site. All electricity is supplied, when required, by local generators. He indicated that the condition of the light poles had not changed for many years and would be addressed if required in the future. • LR spoke to the Dust Deposition Gauges tables in the presentation. He provided an overview of the history and noted that recordings are within the required criteria with no exceedances this year. He made mention of the PM10 and PM2.5 recordings, noting all results are below the required limits. • In terms of Noise Monitoring, LR advised that noise monitoring is undertaken when the quarry is operating, and it now occurs monthly. LR advised that no blasting has occurred onsite yet. He suggested that residents may wish to be placed on a blast notification list to receive warning of blast activities. LR and JC outlined the process of 'attended noise monitoring', whereby noise levels are monitored at four locations each month. • LR advised that in respect of flora and fauna the footprint of the site has not changed. He highlighted ongoing feral animal control. • LR advised that there have been no incidents or complaints reported since the last meeting. • LR advised that the processes associated with the rehabilitation of Doughboy Hollow have commenced. However, this will be a process that will be ongoing for several years in accordance with the Doughboy Hollow Rehabilitation Strategy. Ongoing regular inspections of the rehabilitated areas is undertaken. LR noted that over 1000 trees were planted across 2019, 2020 and 2021. • LR outlined the proposed works for 2023-24. He advised that the next step would be the mobilisation of a crusher. He indicated that there would be noise evaluation undertaken to ensure the location of the crusher minimises noise impact.

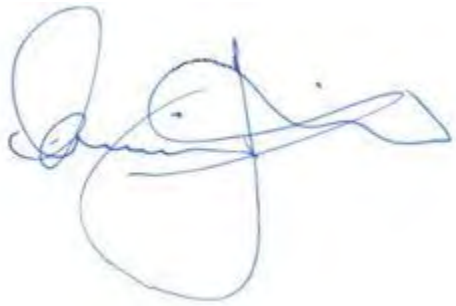
	• CT asked where the new crusher will be located? LR advised that the proposed location of the crusher will be on a pad in the southern section of the existing quarry behind an existing bund as detailed in the Mod 2 Noise Impact Assessment (NIA). CT noted that she probably won't see it, but will I hear it? LR responded that the proposed locations have been selected to minimise noise impact and take into account the noise agreements held. • DR noted that train loading has previously been noticeable from a noise perspective. CT added that crusher operation can be very noisy from her previous experience. • LR explained the changes in the crusher and loader equipment designed to mitigate noise impact. He added that noise limitations placed on the quarry operation need to be complied with. JC added that Daracon is working to minimise noise impact with a focus over the next few months on site development that will assess noise issues and impact. LR noted the embankment adjacent to the crusher will assist in mitigating noise impact towards CT's property. • LR advised that with the approval and impending approval of various management plans and satisfying all the revised conditions of approval under Mod 2, entry into the 'Extension Area' is anticipated in early 2024. • The Committee noted that in accordance with the Mod 2 Consent (Schedule 5, Condition 5), an Independent Environmental Audit (IEA) was completed during 2022 and subsequently approved by the Department of Planning and Environment. • JC advised that staff on the site now number four (4).
8.0 Other Agenda Items	**1. Telecommunications** General discussion proceeded on the poor quality of telecommunications in Ardglen, particularly over the last few weeks. WA advised Telstra was upgrading the network, however it now seemed more unreliable. He also understood upgrade work was being scheduled in the Upper Hunter. LR acknowledged that telecommunication was not of a high quality and advised that a Starlink service had been installed at the quarry to improve connectivity.
9.0 General Business	• **Inland Rail** – CT enquired whether product would be supplied to Inland Rail. JC responded that it is uncertain at this stage. It was indicated that currently it is more economical to move quarry product by road transport rather than rail in the Hunter. • **Vehicle movement** – CT enquired as to identity and movement of a truck/utility with a tank on the rear. JC and LR suggested it maybe a vehicle associated with dust suppression but advised they would follow up and advise CT directly of its identity and purpose.

	• **Electricity Supply** – WA questioned whether the quarry will be connected to the mains electricity supply. LR responded that at this point there is no intention to connect to the mains supply. The use of small generators is currently satisfying electricity demand at the quarry. Investigations are underway to assess the viability of a solar power installation.
10.0 Next Meeting	• Proposed for April 2024 – date to be confirmed

Meeting closed at 10.45 am.

MJS thanked all present for their attendance.

Meeting Minutes Approved:



Michael J Silver OAM
Independent Chair

Date: 4 December 2023

Appendix 4 2023 Community Complaints Register

Date received	***Complaint was received regarding?***	***Complaint was received from?***	***Buttai Gravel response***	***Buttai Gravel action following complaint***	***Closed out (Y/N)***
January 2024	Local ground water wells are drying up and Doughboy Hollow Creek has dried up.	DPHI provided an enquiry / complaint in early 2024 regarding the local ground water wells are drying up and Doughboy Hollow Creek has dried up.	Daracon answered this query and also spent a moderate amount of time explain the likely causes to the complainant.	Continue to liaise with the various community members to assist their understanding of the local environment	Y

Appendix 5 Rubicon (formerly TREES) Erosion & Sediment Control Inspection Report

Ardglen Quarry Inspection Report – Daracon Group

CLIENT	Daracon Group	REPORT DATE	9th June 2023	REPORT NO.	7	REPORT TO:	Geoff Reeves, Luke Robinson, Jason Gorton – Daracon Group
PROJECT	Ardglen Quarry	INSPECTION DATE	5th June 2023	ATTENDEES:	Geoff Reeves – Daracon Group, Andrew Littlewood – Rubicon Enviro.		
WEATHER	Partly cloudy, cool, moderate & gusty winds	COMMENT	The inspection was conducted as the periodic review of erosion and sediment control management practices within the quarry. The preparatory works have recently commenced for the re-activation of the quarry for product sales, and subsequently, the commencement of the approved quarry workings extension. The scope of works underway includes upgrades & repairs of adjacent local roads, relocation of site facilities and weighbridge, installation of a wheel wash, extension of the rail siding sediment basin. Proposed works include the expansion of the main central dam, the partial demolition of crushing infrastructure, quarry floor regrading, drain construction and earth bunding to rationalise drainage patterns, and construction of an orbital haul road. Runoff within the quarry environs continues to be managed by the dams and sump areas which continue to be monitored and managed under the quarry's Water Management Plan. The targeted weed suppression program continues with dieback of weed species noted at various locations in the quarry surrounds. No significant issues were identified and our comments from the inspection are detailed below.				

ISSUE NO.	LOCATION	ISSUE/MATTER	RECOMMENDATION/COMMENT	PHOTOGRAPH
1.	Local roads and U-turn bay.	Upon approach to the quarry site, we noted chipseal repairs to the adjacent local road network including pavement repairs and verge widening. In addition, a U-turn bay for heavy vehicles together with an auxiliary parking area has been established adjacent to the quarry entrance. The U-turn bay is stabilised with quarry aggregate and the remainder of the parking area is partially stabilised with emerging vegetation.	The area is generally stabilised, and no actions were required.	
2.	Weighbridge relocation.	The existing weighbridge facility is proposed to be moved westward, aligning with the direction of travel of outbound vehicles.	As discussed, during the relocation works, ensure localised controls such as aggregate filter bags, coir logs, etc. are deployed in adjacent downslope areas to control coarse sediment.	
3.	Proposed wheel wash.	The excavation work for the wheel wash has commenced and the precast components are on hand for imminent installation. An outward bound light vehicle access will also be established between the wheel wash and the adjacent batter.	Discussions with site controllers confirmed that traffic barriers or a control berm should be installed along the toe of the cut batter to control errant rock or coarse sediment impacting the light vehicle departure road.	

PROJECT:	Ardglen Quarry	INSPECTION REPORT NO.	7	INSPECTION DATE	5th June 2023

ISSUE NO.	LOCATION	ISSUE/MATTER	RECOMMENDATION/COMMENT	PHOTOGRAPH
4.	Crushing infrastructure – main quarry floor.	The majority of the crushing infrastructure located in the southern sector of the quarry floor is proposed to be demolished. The area will then be re-formed and graded to form an orbital haul road that will provide access to the western quarry workings.	As discussed, the areas should be locally re-graded during earthworks to maximise the diversion of runoff to the main central dam.	
5.	Lube shed and fuel storage area.	The lube shed area has remained dormant with adequate bund storage and controls provided. The existing static fuel tanks in the bunded areas, and the bitumen tanks in the southern sector have been emptied, and they are not anticipated to be recommissioned when operations recommence.	Continue maintain the area and visually monitor water quality in the surrounding areas.	
6.	Lube shed and fuel storage area.	As noted above, the existing fuel and bitumen tanks are not anticipated to be recommissioned when operations recommence. The fuel storage requirements will be addressed with the use of prefabricated, portable, bunded fuel tanks which can be relocated as required.	As above.	

Ardglen Quarry Inspection Report – Daracon Group

PROJECT:	Ardglen Quarry	INSPECTION REPORT NO.	7	INSPECTION DATE	5th June 2023

ISSUE NO.	LOCATION	ISSUE/MATTER	RECOMMENDATION/COMMENT	PHOTOGRAPH
7.	Main quarry floor and drainage lines.	Discussions occurred regarding the demolition of crushing infrastructure and the drainage lines in the northern and western areas of the quarry floor.	As discussed, we recommend regrading the quarry floor as required and implementing drainage to minimise areas of ponding and to maximise runoff to the main central dam.	
8.	Main central dam.	Runoff from the quarry slopes and floor continues to be directed to the main central dam, which discharges via an overland drainage line to the rail corridor area. The visual water quality of the central dam was very good with very low turbidity levels.	Discussions occurred regarding the proposed expansion of the dam prior to the quarry extension works commencing. As discussed, we recommend consideration be given to the installation of a sub-soil, low-flow discharge pipe that would extend under the proposed re-aligned haul road and divert flows away from the stockpile area.	
9.	Sediment basin adjacent rail corridor.	The rail corridor sediment basin was inspected. Earthworks were nearing completion that have significantly increased the capacity of the sediment basin. The vegetated batter and sediment basin floor in the eastern sector have been retained whilst the dam has been expanded to the south.	As discussed, the retained vegetation in the eastern section of the sediment basin should rapidly colonise the recently completed areas. Following the completion of works, the sediment basin floor could be hand seeded with a cover crop mix to promote the stabilisation of the basin invert.	

PROJECT:	Ardglen Quarry	INSPECTION REPORT NO.	7	INSPECTION DATE	5th June 2023

ISSUE NO.	LOCATION	ISSUE/MATTER	RECOMMENDATION/COMMENT	PHOTOGRAPH
10.	Sediment basin adjacent rail corridor.	As noted above, earthworks were underway for the sediment basin expansion. At the time of the inspection, the spillway location was marked however the works to construct the spillway had not commenced.	As discussed, we recommend that the spillway invert is lined with an impervious material such as heavy grade plastic, industrial rubber matting, etc., prior to the placement of the proposed geotextile overlay and scour rock. In addition, we recommend consideration be given to the use of a low porosity geotextile such as 'Texel' or similar product.	
11.	Rail loading area.	The rail loading area is largely colonised by ground cover vegetation and pasture grasses. Runoff from the upper quarry areas is filtered by vegetation along the length of the drainage line.	Continue to monitor the drainage lines and undertake periodic weed suppression in the area as required.	
12.	Weed control – main quarry.	As noted on previous inspections, the weed suppression program has been implemented regularly within the quarry surrounds. Evidence of die back of previously treated areas was noted in several areas. In general, outbreaks of weeds are being regularly supressed and no significant weed outbreaks were noted in the main quarry floor and surrounds.	Continue to monitor the quarry working area and perimeter areas and implement periodic weed control as required.	

Report by: Andrew Littlewood – Senior Soil Conservationist & CPESC No. 5988	Signed:	Date: 9th June 2023

Appendix 6 Rehabilitation and nesting inspection report - Ardglen Quarry

umwelt
Environmental & Social Consultants

DARACON Group

2023 ARDGLEN QUARRY ANNUAL BIODIVERSITY MONITORING

Ardglen Quarry

FINAL

February 2024

2023 ARDGLEN QUARRY ANNUAL BIODIVERSITY MONITORING

Ardglen Quarry

FINAL

Prepared by
Umwelt (Australia) Pty Limited
on behalf of
Daracon Group

Project Director: Shaun Corry
Project Manager: Amber Wilson
Report No. 23762_R01
Date: February 2024

This report was prepared using Umwelt's ISO 9001 certified Quality Management System.

Acknowledgement of Country

Umwelt would like to acknowledge the traditional custodians of the country on which we work and pay respect to their cultural heritage, beliefs, and continuing relationship with the land. We pay our respect to the Elders – past, present, and future.

Document Status

Rev No.	Reviewer		Approved for Issue	
	Name	Date	Name	Date
V1	Amber Wilson	30 January 2024	Shaun Corry	1 February 2024
V2	Amber Wilson	9 February 2024	Shaun Corry	9 February 2024

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Appendices

1.0 Introduction

Umwelt was engaged to undertake the 2023 annual biodiversity monitoring program at Ardglen Quarry on behalf of Buttai Gravel Pty Limited (Daracon Quarries). This report documents the methods and results of the 2023 monitoring and compares the results to the baseline monitoring results conducted in 2019 to assist with continued monitoring of the site under a Conservation Agreement in accordance with the *Biodiversity Conservation Act 2016* (BC Act).

The 2023 monitoring was undertaken in accordance with the Landscape Management Plan (LMP) (Umwelt 2023a) for the site, in turn satisfying the relevant conditions contained in the Project Approval 06_0264, and the *Environment Protection and Biodiversity Conservation Act 1999* Approval (EPBC2007/3442).

1.1 Background

Buttai Gravel Pty Limited (Daracon Quarries) operates the Ardglen Quarry (the quarry), a hard rock quarrying, processing and handling operation located approximately 5 kilometres (km) northwest of Murrurundi in Ardglen, NSW (refer to **Figure 1.1**). The Quarry has been in operation for over 100 years with Daracon Quarries (Daracon) holding ownership of the Quarry since 2005. The site is approximately 64 hectares (ha) and is situated in the small rural community of Ardglen, NSW which supports mainly agricultural land.

Three existing Biodiversity Offset Areas (BOAs) are located adjacent to the quarry, being Offset A, Offset B and Offset C (refer to **Figure 1.1**). The land contained in these offset areas consists of box gum woodland and cleared pastoral lands, with a small ephemeral creek line (Doughboy Hollow Creek) and associated riparian vegetation. A small weir was historically established on the creek as the water supply access point for the quarry. A small causeway located approximately 200 metres (m) north of the weir was a historical access point across Doughboy Hollow Creek.

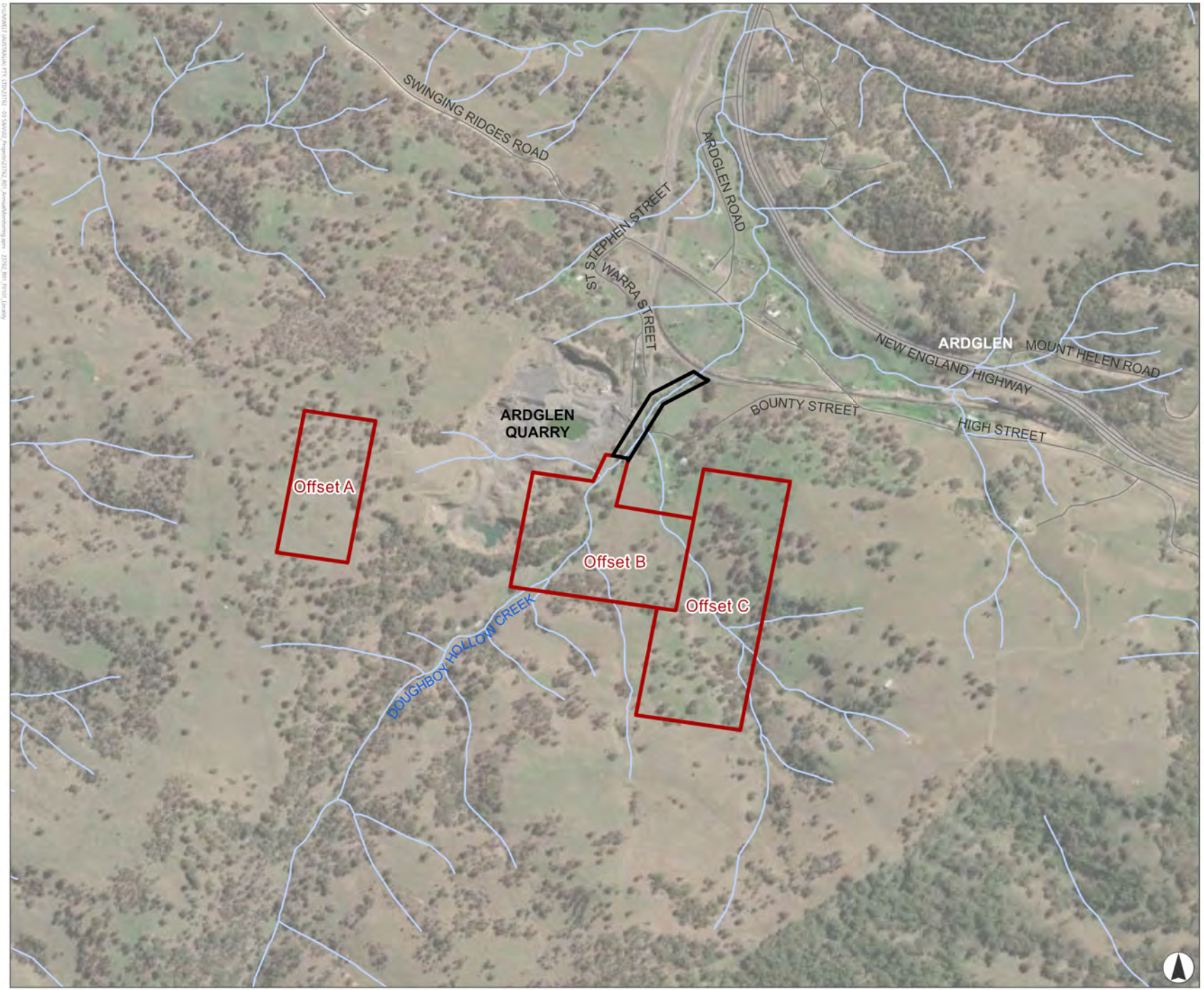
Within Offset A and B, rehabilitation plantings have been made in 2021. Outside the offsets, adjacent to Offset A, two areas of rehabilitation plantings were established in 2020. The rehabilitation plantings both inside and outside the offsets were subject to a walkover and monitoring in the 2023 monitoring event.

Monitoring results from previous years (Umwelt 2020, Umwelt 2021; Umwelt 2022; Umwelt 2023b; Conacher Consulting 2018; Kendall & Kendall 2013) have been referenced in this report, where appropriate, to track the trajectory of conservation commitments in the BOAs.

It is understood that Daracon is in consultation with the Biodiversity Conservation Trust (BCT) to secure the BOAs under a Conservation Agreement, in accordance with the BC Act. In addition to the standard monitoring program, permanent monitoring sites within each vegetation zone have been monitored to satisfy the requirements of the proposed Conservation Agreement for the proposed Conservation (offset) Areas.

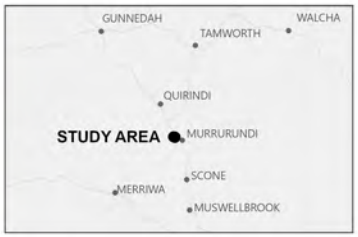
FIGURE 1.1

Location Map



Legend

- Doughboy Hollow Creek Study Area
- Biodiversity Offset Area



0 200 400

Metres

Scale 1:15,000 at A4
GDA2020

Image Source: ESRI Basemap (2023) | **Data Source:** NSW DFSI (2023)

1.2 Objectives

The key objective of this report is to describe the relevant methods, results and recommendations of the monitoring program, and assess performance outcomes with completion criteria outlined in the LMP. The LMP states that the program should monitor:

- condition of perimeter fencing around offset properties to exclude livestock
- weed composition within BOAs including the need for any works to control weeds during the following 12-month period
- the location, condition and usage of salvaged hollows which have been placed in the BOAs
- the location and usage of nest boxes which have been placed within the BOAs
- the extent of natural regeneration within BOAs
- whether any assisted revegetation is required within BOAs.

As described in the LMP:

> *"The completion of this offset monitoring will then inform whether any additional management or remediation measures are required to be implemented with the results of the Offset Monitoring reported in the Annual Review".*

This document also seeks to provide methods and results of the rehabilitation monitoring, both within and outside the BOAs.

Where appropriate, management recommendations have been provided (**Section 6.0**) to guide the improvement of biodiversity values.

2.0 Methods

The 2023 monitoring program was undertaken on 20 and 21 November 2023 by two Umwelt Ecologists.

2.1 Existing Offset Monitoring Program

The field monitoring program covered 34.9 ha, encompassing three BOAs, being Offset A, Offset B and Offset C (refer to **Table 2.1**). This program was conducted in accordance with the requirements of the LMP and follows the methods undertaken in 2019 (Umwelt 2020).

Table 2.1 Biodiversity Offset Areas (BOAs)

Biodiversity Offset Area (BOA)	Lot Number	Total Area (ha)
Offset A	Lot 187 DP 751028	6.8
Offset B	Lot 39 DP 751028	12.3
Offset C	Lot 49 DP 751028	15.8
	Total	**34.9**

As with previous years, erosion transect and soil monitoring as described in the 2017 monitoring report (Conacher Consulting 2018) was not undertaken during this annual monitoring period.

2.1.1 Walkover Assessment

A walkover assessment was undertaken across the BOAs, which involved observation of:

- condition of perimeter fencing around BOAs to exclude livestock
- weed composition within BOAs, including the need for any works to control weeds during the following 12-month period.

2.1.2 Natural Regeneration Monitoring

Natural regeneration was assessed within Derived Native Grassland communities at each of the BOAs. Four 50 m x 20 m plots were established in 2019 in the grassland area within each BOA (12 plots in total), with a small wooden picket marking the northeast corner of each permanent plot. The canopy cover (projective foliage cover %) was assessed within each plot. The location of the natural regeneration monitoring plots is shown on **Figure 2.1**.

Additionally, the number of saplings was counted within each natural regeneration plot. Saplings were defined as individuals of native canopy species with a diameter at breast height (DBH) <5 cm. This number was then multiplied to give the number of saplings per hectare.

Sapling counts included a separate count for obviously planted individuals to best capture the health and rate of regeneration that is occurring naturally compared to that of rehabilitation plantings.

2.1.3 Nest Box Monitoring

Nest box monitoring was undertaken for 27 nest boxes installed in Offset A (Lot 187 DP 751028) which are shown in **Figure 2.2**. These boxes were comprised of:

- 9 brush-tailed phascogale boxes (rear entry)
- 9 glider boxes (front entry)
- 9 microbat boxes (base entry).

Boxes were inspected using a pole-mounted camera. Monitoring comprised content and condition assessment and included the following:

- content monitoring
- target species use
- signs of presence such as nesting material or feathers
- predator use
- presence of native fauna
- presence of non-target species such as bees, wasps and introduced birds.
- condition monitoring:
- collapsing joints
- missing lids
- bowing timber
- perishing timber
- tree attachment.

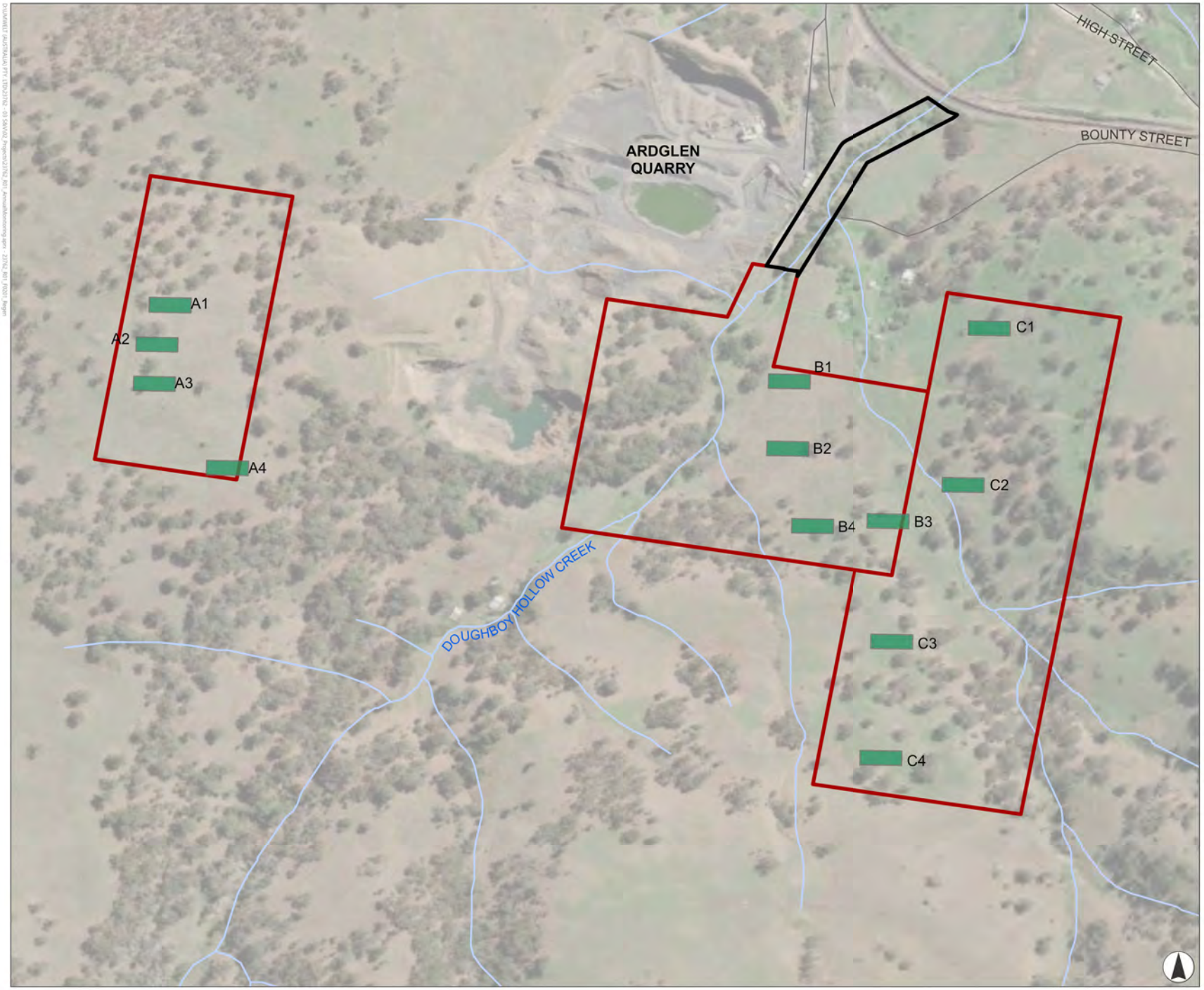


FIGURE 2.1

Natural Regeneration Monitoring Plots

Legend

- Doughboy Hollow Creek Study Area
- Biodiversity Offset Area
- Natural Regeneration Monitoring Plot

0 100 200

Metres

Scale 1:7,500 at A4
GDA2020

Image Source: ESRI Basemap (2023) | **Data Source:** NSW DFSI (2023)

FIGURE 2.2

Nest Box Locations

Legend

- Doughboy Hollow Creek Study Area
- Biodiversity Offset Area

Nest Box Locations

- Glider
- Microbat
- Phascogale

0 50 100

Metres

Scale 1:3,000 at A4
GDA2020

Image Source: ESRI Basemap (2023) | **Data Source:** NSW DFSI (2023)

2.2 Conservation Agreement Monitoring

Four permanent monitoring plots have been established within each of the four vegetation zones in the BOAs identified by Orogen (2010). Each plot was marked in the northeast corner (of the 20 m x 20 m subplot) with a steel picket and high visibility flagging tape. Plot locations are shown in **Figure 2.3**. Photo monitoring, floristic and biometric data collection and a walkover assessment were completed according to the BioBanking Assessment Method (BBAM) methodology (OEH 2014) and are further described in the following sections.

2.2.1 Photo Monitoring

Photo monitoring was undertaken at each plot and is used to identify any observable changes in the vegetation condition and development of vegetation structure over time. Photo monitoring was completed at the northeast plot corner, with photos taken facing north, south, east and west.

2.2.2 Floristic and Biometric Data Collection

Floristic and biometric monitoring was completed at four permanent monitoring sites established at each of the vegetation zones previously outlined by Orogen (2010) in the BOAs. This monitoring was completed in a manner consistent with the BBAM (2014) and consisted of a:

- 50 m transect
- 50 m by 20 m plot
- 20 m by 20 m sub-plot.

For each flora monitoring site, vascular species present within the 20 m x 20 m sub-plot were identified. Searches were generally undertaken through parallel transects from one side of the plot to another. Most effort was spent on examining the groundcover, which usually supports well over half of the species present, however the composition of any shrub, midstorey, canopy and emergent layers were also thoroughly examined.

For each species recorded in the plot, the scientific name, common name, stratum, cover and abundance were recorded. The total native species richness was then calculated for the 20 m x 20 m sub-plot.

Along the 50 m transect, and within the 50 m x 20 m plot, the following were noted:

- overstorey foliage cover
- midstorey foliage cover
- groundcover – grasses foliage cover
- groundcover – shrubs foliage cover
- groundcover – other foliage cover
- proportion of overstorey regeneration
- exotic cover
- hollow-bearing trees
- length of fallen logs.

This data was then compared to benchmark levels for each Plant Community Type (PCT) as outlined in the Vegetation Information System (VIS) database (DPE 2024).

2.2.3 Walkover Assessment

As outlined in the BBAM, a walkthrough assessment of opportunistic sightings was undertaken across the BOAs, making observations of:

- fire events or impacts of fire management
- weeds (including compilation of list of exotic species and recording new weed infestations including location and extent)
- pest animals (species and location must be recorded, including evidence of pest animals such as burrows, scats or disturbance)
- visitor impact and vehicle access (including evidence of any recent usage, and the presence of any new access trails or tracks)
- rubbish dumping
- natural regeneration of previously disturbed areas
- sightings of threatened species.

As this methodology is similar to the walkover assessment in the existing offset monitoring program, the results for each of these have been combined for readability in **Section 4.1**.

2.3 Rehabilitation Assessment

2.3.1 Rehabilitation Walkover (Offset)

Approximately 447 trees were planted across Offset Areas A and B, however these were planted Autumn and Spring in 2021 and were not at a stage of maturity such that it was meaningful to conduct biometric monitoring. Rather, Umwelt conducted a brief walkover inspection of these recently planted areas and made general notes on the condition, suitability of planted species, planting density and approximate survivability of the plants within the rehabilitated areas. Formal monitoring plots will be established at a more appropriate time when a suitable level of maturity has been reached.

2.3.2 Rehabilitation Monitoring (Quarry)

Approximately 500 saplings have been planted in areas adjacent the existing quarry in September 2019 and March/April 2020, with some replanting in 2021 as shown in **Figure 2.4**. Please note that the rehabilitation planting areas on this figure represent the intended planting areas in the LMP and are indicative of the planting areas. The following was undertaken in these areas:

- Two rehabilitation monitoring plots (20 m x 50 m) were monitored using floristic and biometric data collection methods in accordance with the BioBanking Assessment Methodology (BBAM) (OEH 2014).
- The proportion of seedling survivability was monitored in each of the rehabilitation monitoring plots. This was calculated by counting the number of stems within each rehabilitation monitoring plot and assessing their survivability status (dead, alive, senescent etc.) over time.
- No soil sample analysis was undertaken during the 2023 monitoring survey. Soil samples are undertaken on a three yearly monitoring rotation.

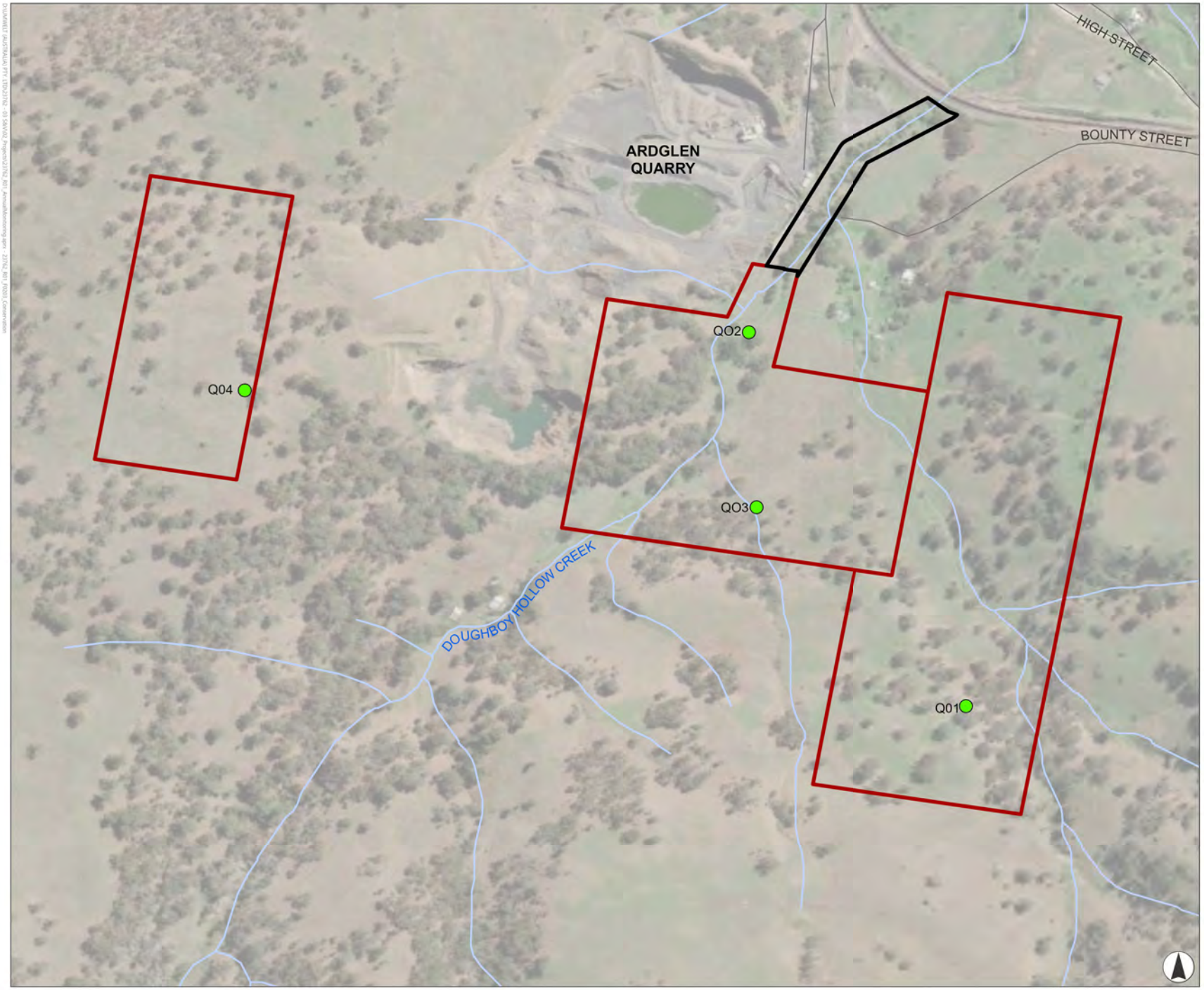


FIGURE 2.3

Conservation Agreement Plot Locations

Legend

- Doughboy Hollow Creek Study Area
- Biodiversity Offset Area
- Permanent Floristic Monitoring Plots

0 100 200

Metres

Scale 1:7,500 at A4
GDA2020

Image Source: ESRI Basemap (2023) | **Data Source:** NSW DFSI (2023)

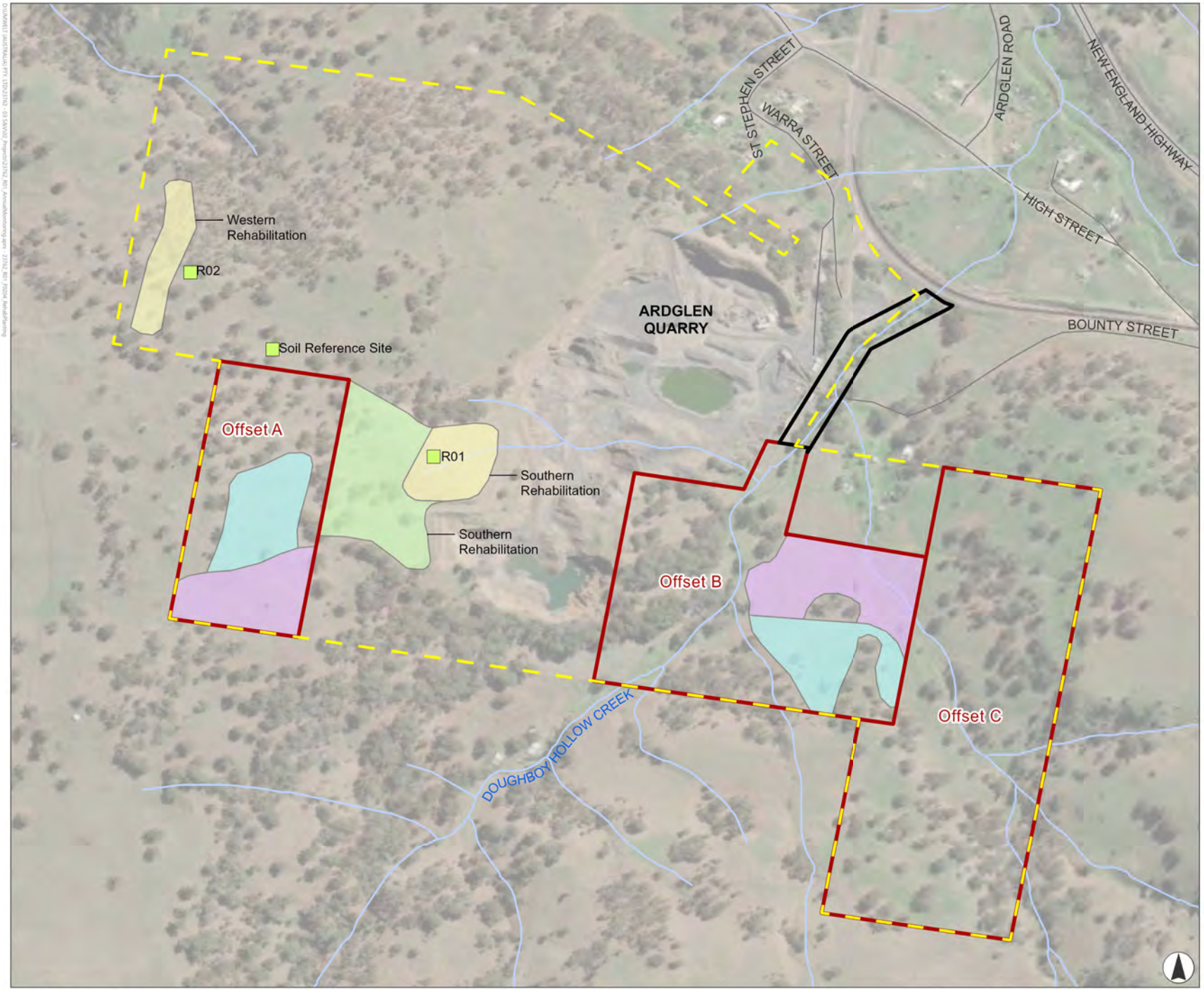


FIGURE 2.4

Rehabilitated Areas and Permanent Plots

Legend

- Doughboy Hollow Creek Study Area
- Biodiversity Offset Area
- Site Boundary
- Older Offset Planting
- Older Rehabilitation Planting
- Recent Offset Planting
- Recent Rehabilitation Planting
- Permanent Rehabilitation Monitoring Plots

0 100 200

Metres

Scale 1:8,258 at A4
GDA2020

Image Source: ESRI Basemap (2023) | **Data Source:** NSW DFSI (2023)

2.4 Doughboy Hollow Rehabilitation Monitoring

Two permanent monitoring plots were established along the riparian zone within Doughboy Hollow to compare the pre- and post-rehabilitation condition of the Doughboy Hollow Creek Study Area and track the trajectory of this Study Area's condition over time. The GPS coordinates of these plot points were recorded, and should be marked in the northeast corner by a star picket during the next monitoring event. Plot locations are shown in **Figure 2.5.**

2.4.1 Photo Monitoring

Photo monitoring was undertaken at each plot and will be used to identify any observable changes in the vegetation condition and development of vegetation structure over time. Photo monitoring was completed at the start of the 50m transect, with photos taken facing north, south, east and west.

2.4.2 Floristic and Biometric Data Collection

Baseline floristic and biometric data was collected for the two permanent monitoring sites established within the Study Area. This data collection was completed in a manner consistent with the BAM (2020) and consisted of a:

- 50m transect
- 50m by 20m plot
- 10m by 40m sub-plot (consistent with BAM guidelines for plots occurring in riparian conditions).

For each flora monitoring site, vascular species present within the 10 m x 40 m sub-plot were identified. Searches were generally undertaken through parallel transects from one side of the plot to another. Most effort was spent on examining the groundcover, which usually supports well over half of the species present, however the composition of any shrub, midstorey, canopy and emergent layers were also thoroughly examined. General physiographic details such as soil type, slope and aspect were also recorded.

For each species recorded in the plot, the scientific name, common name, stratum, cover and abundance were recorded. The total native species richness was then calculated for the 10 m x 40 m sub-plot.

Along the 50 m transect, and within the 50 m x 20 m plot, the following were noted:

- Groundcover – leaf litter, rock, cryptogam, and bare ground
- Stem count of all age classes of native trees
- Hollow and fallen log count.

2.4.3 Weed Cover

A baseline weed cover for the Study Area was established using information collected from the two permanent monitoring plots, as well as observations made during the creek walkover assessment. Weeds identified were grouped into similar growth groups; woody weeds, vines, grassy and herbaceous. A list of weeds with high invasive potential were identified based on the Weeds of National Significance, High Threat Weeds listed under the BAM, and Biosecurity Weeds listed for the Hunter region.

2.4.4 Creek Walkover Assessment

A walkthrough assessment of the creek study area was undertaken to establish general notes on health and condition. Photographs of any management or erosion issues were taken.

FIGURE 2.5

Doughboy Hollow Creek Study Area

Legend

- Doughboy Hollow Creek Study Area
- Biodiversity Offset Area
- Permanent Floristic Monitoring Plots

0 25 50

Metres

Scale 1:2,000 at A4
GDA2020

Image Source: ESRI Basemap (2023) | **Data Source:** NSW DFSI (2023)

3.0 Weather

Monitoring for 2023 period was conducted on the 20 and 21 of November 2023, **Table 3.1** provides the range of weather conditions that occurred in 2023 prior to monitoring. Thes results show the Murrurundi region experienced slightly lower than average precipitation rates throughout the months of 2023 (BOM 2024).

The precipitation rates over late winter and early spring 2023 are seen to be lower than the long term average, and likely contributed to the die off of predominantly exotic groundcover vegetation biomass which has accumulated over the last two years of higher than average rainfall.

Temperatures in Murrurundi were predominantly higher than long term averages, daily maximum temperatures reflected a warm year, with all months except April and May exceeding the maximum recorded temperature of the corresponding months for 2022.

Table 3.2 shows the weather conditions that were experienced during the 2023 monitoring period.

3.1 Climatic Conditions

The Combined Drought Indicator (CDI) (DPI 2024b), developed by the NSW Department of Primary Industries, uses three indices (Rainfall Index, Plant Growth Index and Soil Water Index) to determine the drought category at any given time. The CDI classifies each parish in NSW into one of five drought categories:

- **Non drought:** At least one indicator is above the 50th percentile.
- **Recovering phase:** All indicators are below the 50th percentile but above the 30th percentile.
- **Drought Affected:** At least one indicator is below the 30th percentile.
- **Drought:** At least one indicator is below the 5th percentile.
- **Intense Drought:** All three indicators (rainfall, soil water, plant growth) are below the 5th percentile.

Temi Parish is the representative Parish for Ardglen Quarry, the Combined Drought Indicator (CDI) identifies the Temi Parish as “Drought Affected (intensifying)” during the 2023 monitoring period, these trends are shown in **Graph 3.1** (DPI 2024b)

The CDI graph shows that Temi Parish experienced “Non-drought” conditions for the majority of 2023, and only fell to the condition of “Drought affected” in September 2023 after experiencing lower than average winter precipitation. This is reflected in the gradual decline of the rainfall index, plant growth index and soil water index; falling from peak records in 2022 to a value of less than 20 for all indexes by November 2023.

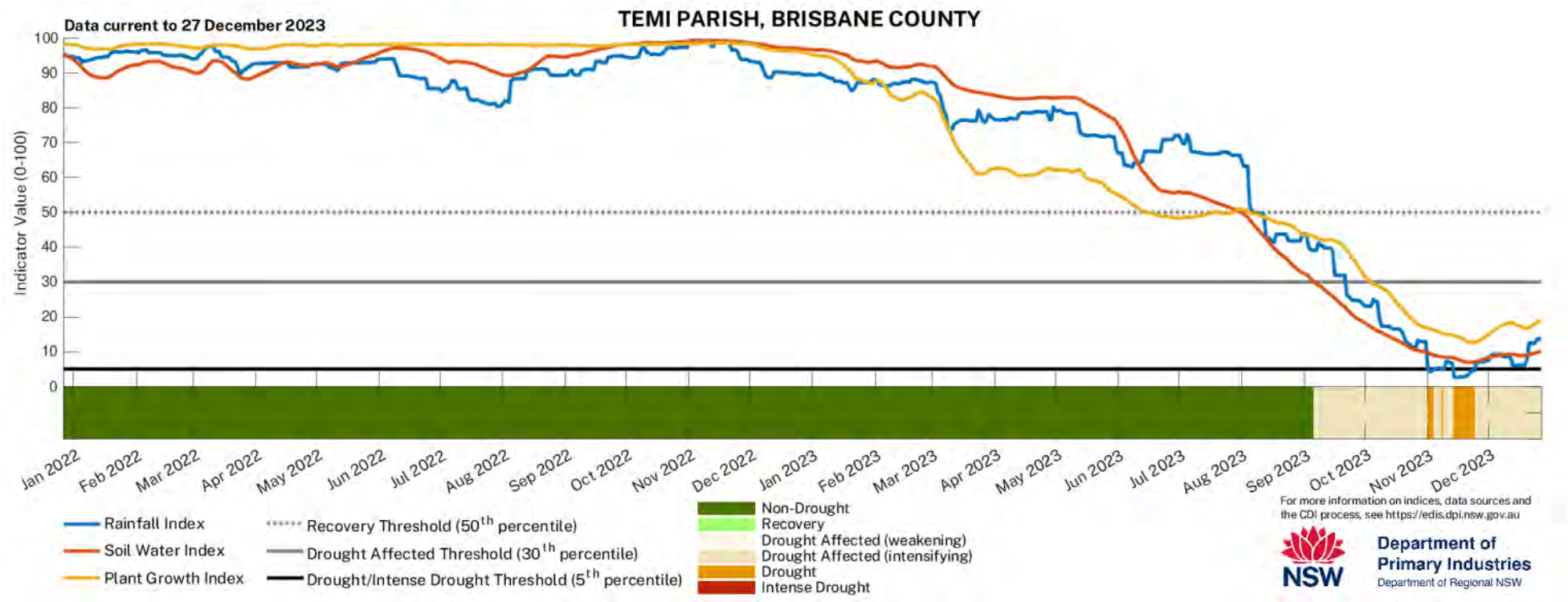
This has implications in terms of vegetative performance, soil performance and ultimately landscape functioning of the rehabilitated areas at Ardglen. A period of low rainfall, water index and plant growth index may reduce the capacity of the vegetation to recover and regenerate.

Table 3.1 Monthly Temperature and Rainfall Data from Murrurundi Gap AWS (Station 061392) during 2022 (BOM 2024b)

	2022		2023										
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
Maximum Temperature (°C)	27.8	30.3	33.6	33.8	34.4	23.0	21.0	22.1	18.8	20.8	28.3	30.7	30.0
Mean Maximum Temperature (°C)	21.1	23.9	28.0	28.7	27.3	19.9	15.9	14.5	14.4	17.8	21.7	23.5	24.9
Long Term Mean Maximum Temperature (°C)	*24.3*	*26.4*	*28.5*	*27.2*	*24.4*	*20.9*	*16.7*	*12.9*	*12.6*	*14.8*	*18.5*	*21.9*	*24.3*
Minimum Temperature (°C)	3.8	6.2	10.2	12.1	9.8	5.5	0.9	-0.7	0.7	2.5	1.5	5.0	7.9
Mean Minimum Temperature (°C)	10.0	11.6	14.6	15.7	15.8	10.0	6.4	6.0	6.0	6.9	9.9	11.6	12.9
Long Term Mean Minimum Temperature (°C)	*13.0*	*14.7*	*16.5*	*15.7*	*14.2*	*11.2*	*8.1*	*5.8*	*5.0*	*5.8*	*8.5*	*11.0*	*13.0*
Total Rainfall (mm)	**7.4**	**10.2**	**53.4**	**42.8**	**76.2**	**36.8**	**2.8**	**38.0**	**29.0**	**46.8**	**22.0**	**33.0**	**119.0**
Long Term Mean Rainfall (mm)	*85.2*	*83.0*	*65.9*	*68.9*	*79.1*	*32.4*	*34.7*	*63.9*	*47.5*	*42.3*	*46.2*	*55.7*	*86.8*

Table 3.2 Temperature and Rainfall Data from Murrurundi Gap AWS (Station 061392) during the November 2023 Monitoring Event (BOM 2024b)

	20/11/2023	21/11/2023
Maximum Daily Temperature (°C)	18.2	23.1
Minimum Daily Temperature (°C)	14.4	13.4
Rainfall (mm)	3.2	11.0



Graph 3.1 Combined Drought Indicator record for Temi Parish, Jan 2022 - Dec 2023

(DPI 2024b)

4.0 Results

4.1 Offset Monitoring Program

4.1.1 Walkover Assessment

4.1.1.1 Fence Condition

A walkover assessment was conducted across all three BOAs. Inspection of fences showed that external fences of the BOA properties are functioning adequately, and no damage was observed. Upgrades made at some internal gates in recent years are continuing to function well. Fences are not appearing to deter feral dogs, pigs or deer, with one pig crossing location observed under the fence near the gate of offset A. Despite this, increased security measures (e.g. mesh fencing) are not recommended, as these may also deter native animals. Internal fencing noted in previous site visits, particularly between Offset B and Offset C, remains on site. This can be removed, if practical.

4.1.1.2 Pests and Livestock

Despite continued management of feral animal populations throughout 2023 (**Appendix C**), wild dogs, deer and pigs remain a threat to the wildlife and native rehabilitation plantings within the BOA. During the site visit, digging and pig rooting were observed throughout areas of rehabilitation planting, particularly in Offset B (**Photo 4.1**). In these areas many of tree guards surrounding the saplings had given way and were bending, or had killed the sapling within, likely due to pig or deer rubbing/disturbance. Pig prints were also observed in an animal crossing point under the fence of Offset A.

Two fallow deer were sighted during the site visit, moving east through Offset A. Scats, likely belonging to feral dogs were also observed onsite. It is recommended that the routine feral animal shooting which was developed in 2023 continues, to reduce threats to wildlife and rehabilitation plantings within the BOAs.

If wild dog numbers are observed to increase across the BOAs, it is recommended that Daracon liaise with Local Land Services (and potentially neighbouring landholders) to discuss the merits of implementing a wild dog 1080 baiting protocol. Further information about integrated wild dog management and 1080 baiting can be found on the NSW Department of Primary Industries website (DPI 2024b).

Rabbits and hares persist across the BOAs however the observable evidence of both species was minor, and it is not considered that their presence poses a threat to the condition of the BOAs such that management is required.

Photo 4.1 Pig Damage in Offset B

4.1.1.3 Fire Events or Impacts of Fire Management

No fire events or fire management actions were experienced or undertaken in 2023.

As climatic conditions continue to dry after the end of the La- Niña period, high grass fuel loads reported on site in the 2022 period were observed to be dying off in 2023. This observation is consistent with conditions across the state, resulting in an increased risk of grassfires moving into the 2024 period. However, the absence of a dense shrub layer and the open nature of the woodland would likely reduce the intensity of fire if ignition occurred. Daracon should monitor the climatic conditions in conjunction with the groundcover condition and undertake any bushfire hazard reduction management actions outlined in the LMP if necessary.

4.1.1.4 Weeds

Weeds with high invasive potential were generally observed at low to moderate levels throughout the BOAs. Exotic groundcover species were most abundant in the Derived Native Grassland areas, with more native groundcovers in the understory of the open woodland.

St John's wort (*Hypericum perforatum*) has progressed from only being observed in Offset A in 2021, to being observed in all three Offsets on site in 2023. It is present in high numbers through sections of Offset A and Offset B, and moderate numbers in Offset C (**Photo 4.2**). Weed control across these areas is highly recommended.

Blackberry (*Rubus fruiticosa*) has been observed in small patches throughout all three offsets, which has spread from where it was observed in Offset A in 2021 (**Photo 4.3**). It is recommended that these patches are managed while the infestation remains relatively small.

African lovegrass (*Eragrostis curvula*) remains present in large patches throughout all BOAs. This species likely colonised the bare areas left after the drought in 2019-2020. Generally, this species is an issue for grazing animals, which is not an issue within the BOAs however it has likely come from neighbouring properties and has become quite widespread such that weed control for this species is likely ill-advised. Slashing may help control biomass and seed heads.

Prickly pear (*Opuntia stricta*) was observed in two small patches in Offset A and Offset C (**Photo 4.4**). This species has not been observed on site recently and has likely come from neighbouring properties as both patches occur within 50 m of the boundary fence. It is advised that these patches are managed while the infestation is small.

Given the very dry conditions and very low groundcover observed in 2019, and the subsequent amount of rainfall during the three years following, 2023 saw a significant increase of predominantly exotic ground cover. As conditions dry and become less favourable for these exotics, it is likely we will see a significant increase in drought tolerant native species such as native grasses. It is noted that some of the high threat weed species present on site, including St John's wort and blackberry, favour sites with average rainfall of >600mm annually, and their coverage is likely to decline naturally if conditions continue to dry. However, other weed species such as African lovegrass and prickly pear are extremely hardy, drought tolerant species, and will likely present significant threats if they remain unmanaged as conditions dry.

Photo 4.2 High coverage of St John's Wort (*Hypericum perforatum*) present in Offset A

Photo 4.3 Blackberry (*Rubus fruiticosa*) patch near creek line in Offset B

Photo 4.4 Small patch of prickly pear (*Opuntia stricta*) seen in offset C

4.1.1.5 Rubbish and Dumping

There were no significant rubbish or dumping issues observed across the BOAs.

4.1.1.6 Visitor and Vehicle Impacts

No negative impacts observed in 2023.

It was noted that the track from the operational quarry area to the gate at the top of the hill towards Offset A has been restored and gravelled, however the track from the gate to the entrance of Offset A is still hazardous when accessing the necessary areas during inclement weather. It is recommended that works to upgrade the track continue across the full length.

4.1.1.7 Natural Regeneration of Previously Disturbed Areas

Discussed further in **Section 4.2**.

4.1.1.8 Threatened Species Sightings

No targeted threatened species searches were undertaken as part of this monitoring, and no other threatened species were observed.

4.1.2 Natural Regeneration Monitoring

The results of the natural regeneration monitoring for Offset A, Offset B and Offset C are presented in **Table 4.1**. The results include planted individuals that fell inside the plots in brackets.

The locations of the natural regeneration plots were the same as those established in 2019. The GPS co-ordinates in each of the tables below were taken from the northeast corner of each 50 m x 20 m plot.

Table 4.1 Natural Regeneration Monitoring Results

Plot Name	Easting	Northing	Cover (%)	Sapling Count (per plot)	Sapling Count (per hectare)
Offset A					
A1	289077	6486201	0.1	1 (5)	10 (50)
A2	289062	6486145	0	0	0
A3	289060	6486090	0.1	3	30
A4	289150	6485973	0.1	3	30
Offset B					
B1	289822	6486108	0.9	10 (5)	100 (50)
B2	289821	6486014	0.4	5	50
B3	289945	6485915	0	0	0
B4	289854	6485906	0.3	4	40
Offset C					
C1	290061	6486188	0	0	0
C2	290034	6485967	0	0	0
C3	289953	6485745	0.1	1	10
C4	289943	6485582	0.1	1	10

The canopy cover (%) and sapling counts for natural regeneration plots were low which is representative of Derived Native Grassland areas, however this number is increasing marginally. Saplings were recorded for the first time within Offset A, with three of four natural regeneration plots showing signs of natural recruitment. Overall, eight plots (67%) had one or more saplings already present which has doubled the number of plots since 2022. Offset A and Offset B had been planted with supplementary plantings and some of these plantings overlapped with the Natural Regeneration monitoring plots as seen in plot A1 and B1.

4.1.3 Nest Box Monitoring

The full nest box monitoring results are provided in **Appendix A**. A summary of results is outlined in **Table 4.2.**

Table 4.2 Nest Box Monitoring Results Summary

Box Type	No. with signs of occupation*	No. with pest species	No. with actual occupation	Target Species Identified	Nest Boxes requiring Repair/Replacement
Phascogale (rear entry) (9 boxes)	Glider nest (6) **Total = 6**	Arachnid (3) Cobweb (1) Isopod (1) Mud wasp nest (1) **Total = 6**	0	No	0
Microbat (9 boxes)	0	Arachnid (3) Cobweb (5) Isopods (1) **Total = 9**	0	No	0
Glider (front entry) (9 boxes)	Glider nest (2) Inactive glider nest (2) Worn or chewed entry (1) **Total = 5**	Ant nest (1) Cobwebs (1) **Total = 2**	0	No	NB02 wood with carpet fallen inwards, otherwise good condition, not essential to be fixed
Total = 27	**11**	**17**	**0**	**0**	**1**
% of Boxes	**40.7**	**70.3**	**0**	**0**	**3.7**

* Sometimes these numbers will add to more than their total as a number of fauna species may utilise the same nest box

This year's monitoring period showed over all slightly less usage of nest boxes for vertebrate fauna (40.7%) than in 2022, however, this is likely a function of there being no evidence of bird habitation in this monitoring period, as evidence of target species occupation has actually increased this year. Although no actual gliders were observed within the boxes, the number of nest boxes with evidence of target glider species utilising nest boxes has increased from six in 2022 to 10 in 2023, representing an increase of target glider habitation of nest boxes by 15% to 37% currently. An example of a glider nest is shown in **Photo 4.5.**

An increase in pest species present was observed, however, as there appears to be an increase in target species utilisation, no management actions are recommended, at this point in time.

It was observed that all of the nest boxes flagged for maintenance in 2022 had been repaired and were in good condition, which may be a factor of the increase in glider occupation. Carpet had fallen inwards on a single nest box (NB02). This is not an impediment to animal usage but is a slight impediment to monitoring visibility. The carpet may be removed.

Photo 4.5 Glider nest (sugar or squirrel, indeterminate) identified in NB03/TT178

4.2 Conservation Agreement Monitoring

Four permanent monitoring plots were established within each of the four vegetation zones in the BOAs identified by Orogen (2010). These vegetation zones have been assigned a Plant Community Type (PCT) to be comparable with PCT benchmarks and track condition and progress over time. These PCTs have been described using floristic data, broad-scale vegetation mapping (DPIE 2020) and using knowledge of the local topography and landscape. The vegetation zones with their corresponding PCT and site locations are outlined in **Table 4.3.**

Table 4.3 Vegetation Zones and Corresponding PCT and Plot Information

Plot Name	Easting	Northing	Zone	Vegetation Zone (Orogen 2010)	PCT Name
Q01	290019	6485647	56	Blakelys Red Gum (+/- Yellow Box) Dry Sclerophyll Grassy Woodlands/Open Woodland.	PCT 496 - Yellow Box - White Box - Silvertop Stringybark - Blakely's Red Gum grass shrub woodland mainly on the Liverpool Range, Brigalow Belt South Bioregion.

Plot Name	Easting	Northing	Zone	Vegetation Zone (Orogen 2010)	PCT Name
Q02	289747	6486167	56	River Oak (*Casuarina cunninghamiana*) Dry Sclerophyll Woodland.	PCT 485 - River Oak riparian grassy tall woodland of the western Hunter Valley (Brigalow Belt South Bioregion and Sydney Basin Bioregion).
Q03	289761	6485921	56	White Box (*Eucalyptus albens*) and Rough barked Apple (*Angophora floribunda*) Dry Sclerophyll Grassy Woodland.	PCT 433 - White Box grassy woodland to open woodland on basalt flats and rises in the Liverpool Plains sub-region, Brigalow Belt South Bioregion.
Q04	289144	6486073	56	Derived Native Grassland.	PCT 796 - Derived grassland of the NSW South Western Slopes.

The full flora list, biometric data and photo monitoring results for the monitoring of the permanent Conservation Agreement monitoring sites are presented in **Appendix B**.

A comparison of the data collected at each of the monitoring sites to previous year's monitoring results and their corresponding PCT benchmarks is outlined below:

Q01 - PCT 496 - Yellow Box - White Box - Silvertop Stringybark - Blakely's Red Gum grass shrub woodland mainly on the Liverpool Range, Brigalow Belt South Bioregion

Native species richness at this site has increased and is currently at 54% of the benchmark; a 22% increase from 2022. Overstorey foliage cover was stable this year, remaining at 27% of the benchmark. Mid-storey foliage cover remained at nil. Native grass cover had a significant increase, and well exceeded the benchmark. Exotic cover has decreased significantly, potentially due to die off, of species which favoured the wet climatic conditions of the prior La- Niña period, and competition with better adapted native grasses. Native forbs and "other" decreased this year and are currently below the benchmark. Fallen log cover dropped this year and this is likely a function of either low visibility due to the thick ground cover or decomposition due to high levels of rainfall the previous three years. Regeneration of canopy species was evident in this plot.

Q02 - PCT 485 - River Oak riparian grassy tall woodland of the western Hunter Valley (Brigalow Belt South Bioregion and Sydney Basin Bioregion)

Native species richness had a slight increase at this site, now meeting 21% of the benchmark. Overstorey cover increased slightly, now sitting at 62% of the benchmark. Mid-storey foliage cover marginally decreased to now sit at 10% of the benchmark. The increase in native grass and forb cover seen in the previous year has not continued, now sitting at 34% and 0% of the benchmark respectively.. This is reflected in the 18% increase of exotic species observed on the site. Fallen logs were not observed on the site, but may be a reflection of the tall exotic grass cover obscuring visibility. Regeneration of canopy species again has not been observed in this area.

Q03 - PCT 433 - White Box grassy woodland to open woodland on basalt flats and rises in the Liverpool Plains sub-region, Brigalow Belt South Bioregion

Native species richness increased slightly since 2022, and now is sitting at 48% of the benchmark. Overstorey foliage cover has also increased, now reflecting the benchmark score of 18%. The mid-storey foliage cover has remained stable, remaining at nil since the year prior. Native grass cover had a significant

increase, and well exceeded the benchmark. Exotic cover has decreased significantly, potentially due to dieback of species which favoured the wet climatic conditions of the prior La- Niña period, and competition with better adapted native grasses. Native forbs and "other" decreased this year and are currently sitting at nil. Overstorey regeneration was observed in this plot, and fallen logs remained absent.

Q04 - PCT 796 - Derived grassland of the NSW South Western Slopes

Native species richness increased marginally since last year's monitoring period, currently sitting at 71% of the benchmark. Native overstorey and mid-storey cover were appropriately absent, as were fallen logs. At this site we saw the same trend as in Q01 and Q03, whereby native grass cover has significantly increased to 90% of the benchmark, and forb and exotic cover has significantly declined, likely a result of native grasses outcompeting them in the increasingly dry conditions.

4.3 Rehabilitation Assessment

4.3.1 Rehabilitation Walkover (Offset)

Approximately 447 tubestock were planted within Offset A and Offset B in 2021 in the indicative planting areas shown in **Figure 2.4**. Older offset supplementary plantings were made in Autumn 2021, with recent plantings made in Spring 2021. 75% Heights ranged from 0.5 -2 m. Condition and survivorship of these plantings was good with approximately 75% of plantings surviving. As with previous years, Most of the losses encountered appeared to have been contributed to by destructive behaviour by feral pigs and deer, which has also resulted in damage to tree guards (**Photo 4.6**). Some saplings have been bent by fallen guards and are growing horizontally along the ground. In some cases, weeds and high grass are competing with saplings for space, however, more established saplings were observed to high survivorship amongst high coverage of St John's Wort (**Photo 4.7**).

Photo 4.6 Plantings in Offset B – Example of pig rooting and damage to tree guards

Photo 4.7 Planting in Offset A – Planting successful amongst high coverage of St John's Wort

4.3.2 Rehabilitation Monitoring (Quarry)

4.3.2.1 Condition and Survivability

Approximately 500 saplings were planted in the two rehabilitation areas outside of the BOAs and identified in the indicative planting areas in **Figure 2.4**. Two areas were planted within the quarry boundary. The Western Rehabilitation plantings were undertaken in September 2019 along with the lower/eastern plantings in the and the Southern Rehabilitation area. The top/western portion of this area was planted in March/April 2020.

Both areas continued to show a high survival rate, and although the count of saplings was not exhaustive, only a small number of planted individuals appeared to have perished. Survival rate appeared to be above 75% in both areas. Though some species could not be identified due to their young age, the species mix appeared to be a satisfactory mix of representative canopy and mid-storey species for the area.

In the Western Rehabilitation plantings, the plant guards seemed mostly intact, with most of the damage likely cause by feral animal interference occurring on the southern side of the slope near R01. Pickets and barriers were observed to have fallen over or snapped/rotted at the point where they contacted the ground. In some cases the fallen barriers were bending living plantings so that they were growing horizontally along the ground. Plant heights ranged from 0.2 to 2.7 metres in height, which indicated a small increase from the 2022 monitoring period. Given the timing of plantings in this area in the height of intense drought, the survival rate and condition of these plantings is very high. Many of the successful older plantings have reached a size where they are being constricted by their surrounding tree guards, and these should be removed for their continual growth and safety (**Photo 4.8**). The plantings within the Southern Rehabilitation area have not had the same rate of success as those within the Western Rehabilitation area. This is likely a function of the exposed and sloped nature of the site resulting in lower soil moisture and soil retention. Tree guards showed less signs of feral animal interference, with many still standing despite the enclosed tree not surviving. Planting that have survived are in a generally healthy condition, and were observed to be at an average height of 0.4m, with a small number of individuals reaching a height of around 1 metre. Plantings in this area are not yet mature enough to have their tree guards removed.

Survivability characteristics of plantings in rehabilitated plots are outlined in **Table 4.4**. Survivorship was good at both sites, with natural regeneration of the shrub layer boosting success.

Table 4.4 Survival of Plantings in Rehabilitated Plots

Plot Name	Alive	Dead/Missing	Total
R01 (2021)	7	2	9
R02 (2021)	6	3	9

Photo 4.8 Rehabilitation planting near R02 – the sapling is now established; fencing should be removed for tree safety

4.3.2.2 Rehabilitation Biometric Transect Data

Two plots were established in Southern and Western Rehabilitation (R01 and R02 respectively). Full floristics and biometric transect data are provided in **Appendix B**. No comparative benchmark data is available as these plots do not yet resemble any PCT, but assessment has been made based on mature woodland PCTs in the surrounds.

R01 – Southern Rehabilitation

Native species richness has declined from 14 to 9 species at this site since the 2022 monitoring event. The decline may be a function of drying climatic conditions exacerbated by the exposed aspect of this site. Native overstorey coverage and midstorey coverage remained stable at 2% and 0% respectively, which is expected for early stage rehabilitation sites. Native grass cover declined slightly but remains reasonably high at 62%. Forb and 'other' cover has decreased to 1% and exotic cover has decreased to 36%. Fallen logs and overstorey regeneration characteristics were predictably absent and these will improve in the years to come. Shrub characteristics were also absent however a shrub layer is beginning to establish in the surrounding areas.

R02 – Western Rehabilitation

Native species richness has decreased slightly from the 2022 monitoring period, now sitting at 15 species. Overstorey coverage was recorded to be stable and is still sitting at 11%. Mid-storey coverage remained relatively stable and reflects what would be expected for open woodland. The percentage of grass cover has declined since last year but remains relatively high at 68%. Native forb and 'other' cover remains stable at 14%. Exotic cover at this site has declined to 8%. Fallen logs and overstorey regeneration characteristics were predictably absent and these will improve in the years to come.

4.3.2.3 Soil Results

Soil samples were not undertaken this year as these occur on a three-yearly rotation, however the 2021 results are outlined in **Table 4.5** for context.

Table 4.5 Rehabilitation Soil Testing Results

Plot Name	pH	Electrical Conductivity (µS/cm)	Total Nitrogen (mg/kg)	Total Phosphorus (mg/kg)
R01 (2021)	8.2	112	0.4	3480
R02 (2021)	6.5	61	11.7	1880
REF1	6.4	51	6.0	1110

These results show that the soil results for the rehabilitated sites are well within the normal limits for acidity and salinity (pH and EC), with R02 trending closer to the reference site. Nitrogen levels were variable, with levels very low at R01, likely due to its thin topsoil cover, and adequate levels (>10 mg/kg) at R02. Total Phosphorus at R02 was similar to that of the reference site, though both numbers were slightly high, however the Total P at R01 was very high. Since phosphorus is most available to plants between pH 6-7, these high phosphorus levels may not be as bioavailable as those at R02.

4.4 Doughboy Hollow Creek Monitoring Program

Two permanent monitoring sites were established to compare the pre- and post-rehabilitation condition of the Doughboy Hollow Creek Study Area and track the trajectory of this Study Area's condition over time. Baseline native vegetation condition was established for the two permanent monitoring sites using the BAM (**Appendix B**).

4.4.1 Baseline Biometric Transect Data

DB01 – Southern site

Native species richness was recorded as being low, sitting currently at 7 species, with most being found in the ground layer. Native overstorey coverage is at 30%, and native mid-storey coverage is at 0%. All native ground cover types were observed as being very low, with grasses recorded as 5.5%, and forbs and other recorded at 0.6% coverage. Exotics dominated this plot, with a coverage over all strata of 59%. Two tree hollows were observed within the plot, and no fallen logs were recorded. No native canopy regeneration was observed. Leaf litter coverage was recorded at 21%.

DB02 – Northern site

Native species richness at this site is considered very low, with only 2 native species recorded. Native overstorey and mid-storey were completely absent. Native ground cover was very low, with grasses recorded as being at 0.7% coverage, and forbs and "other" recorded at 0.3% coverage. Exotics dominated this plot, being recorded at a coverage of 125% across all storeys. A combined total of 30m length of fallen logs were observed within this site, and no tree hollows were recorded. Native canopy regeneration was not observed, and leaf litter coverage was low at 10%.

4.4.2 Baseline Weed Cover

Data collected in the floristic and biometric monitoring and observations during the walkover assessment were used to inform the baseline weed cover for the study area, shown in **Table 4.6.** Weeds identified on site were also assessed against the Weeds of National Significance (DPI 2024a), High Threat Weeds listed under the BAM (DPE 2024), and Biosecurity Weeds listed for the Hunter region. Weeds that appear on these data bases are considered to have high invasive threat.

Table 4.6 Baseline weed cover and assessment of threat for Doughboy Hollow 2023

Species	Common Name	Cover (%)	High Threat Weed	Weed of National Significance	Biosecurity threat for Hunter
Woody					
Ligustrum lucidum	Large-leaved privet	1.5	Yes	-	-
Ligustrum sinense	Small leaved privet	12.5	Yes	-	-
Malu spumila*	Apple	1	-	-	-
Rosa rubiginosa**	Sweet briar	0.1	Yes	-	-
Rubus fruiticosus**	Blackberry complex	3.5	Yes	Yes	Yes
Salix babylonica**	Weeping willow	3	Yes	Yes	-
Vine					
Hedera helix	English ivy	0.1	Yes	-	-
Jasminum officianale*	Jasmine	0.1	-	-	-
Lonicera japonica**	Japanese honeysuckle	0.5	Yes	-	-
Grassy					
Bromus catharticus	Prairie grass	2.5	-	-	-
Cenchrus clandestinus	Kikuyu grass	20	-	-	-
Lolium rigidum	Wimmera ryegrass	0.2	-	-	-
Phalaris aquatica	Phalaris	47.5	-	-	-
Herbaceous					
Cirsium vulgare*	Spear thistle	0.1	-	-	-
Cyperus eragrostis**	Umbrella sedge	0.2	Yes	-	-
Foeniculum vulgare*	Fennel	0.2	-	-	-

Species	Common Name	Cover (%)	High Threat Weed	Weed of National Significance	Biosecurity threat for Hunter
Galium divaricatum*	Slender bedstraw	0.1	-	-	-
Hypericum perforatum subsp. veronense **	St John's wort	0.2	Yes	-	Yes
Hypochaeris radicata*	Catsear	0.1	-	-	-
Medicago sativa*	Lucerne	0.1	-	-	-
Paronychia brasiliana*	Chilean whitlow wort	0.1	-	-	-
Petrorhagia nanteuilii*	Proliferous pink	0.1	-	-	-
Plantago lanceolata*	Lamb's tongues	0.2	-	-	-
Verbena bonariensis*	Purpletop	0.1	-	-	-
Vicia sativa	Common vetch	0.1	-	-	-

4.4.3 Creek Walkover Assessment

A walk over assessment was conducted to assess the general health and condition of the Doughboy Hollow Creek Study Area. The riparian environment throughout the study area was generally observed to be in moderate condition.

The creek itself is reasonably healthy, with a desirable pool-riffle sequence, and evidence of a range of macro-invertebrate species using the watercourse.

Scattered throughout the site was a small amount of scrap metal and wood (**Photo 4.9**), likely from historic rail and quarry infrastructure. In some areas it appeared that this infrastructure was assisting in preventing further erosion. Remains of historic building materials were also observed to be scattered throughout the site, and in some areas this material makes up a moderate proportion of the soil matrix.

The creek line displayed varying levels of erosion throughout the site, with higher levels occurring towards the southern section of the site (**Photo 4.10** and **Photo 4.11**). The scoured banks had some vegetative growth, indicating that the eroded areas were somewhat stable at the time of monitoring. The thick ground cover of exotic grasses is likely assisting in soil retention along areas with low canopy cover.

There was no evidence of recent or historical fire within the study area

There was no evidence of pest animals within the Study Area, however cattle were observed on rural lands to the east of the Study Area boundary where there is a small tributary which drains into Doughboy Hollow Creek. This tributary was experiencing cattle pugging (**Photo 4.12**), which may have some impact on the water quality of Doughboy Hollow Creek.

There was no evidence of unlocked gates, failed fences or unauthorised breaches around the Study Area.

Photo 4.9 Scrap metal in Doughboy Hollow Creek Study Area

Photo 4.10 Creekbank erosion along Doughboy Hollow Creek Study Area

Photo 4.11 Creekbank Erosion and Quarry Rubble in South Section of Doughboy Hollow Creek Study Area

Photo 4.12 Cattle pugging East of Doughboy Hollow Creek Study Area

5.0 Compliance with LMP

An evaluation of the BOAs against the relevant performance/completion criteria outlined in the LMP is provided in **Table 5.1**. for the Offset Areas, and **Table 5.2** for Rehabilitated Areas. Performance has not been compared against completion criteria for the Doughboy Hollow.

Table 5.1 Assessment of the BOAs against LMP performance criteria

Feature	Aspect	Performance/Completion Criteria	Assessment
Landscape Condition	Weed infestation	Weeds do not comprise more than 15% cover in any stratum. There are no significant weed infestations.	**Progressing towards.** Weed cover was widespread and exotic species represent greater than 15% cover in the ground stratum in 75% of all plots. This is likely a side-effect of drought recovery and soil moisture promoting the growth of dormant exotic species in the seedbank, and the inability of Daracon to undertake substantial weed control works in 2021 or 2022 due to wet weather events and subsequent access issues. Track upgrades should be considered to support the continuation of weed infestations across the offsets so that condition does not decline further, and it is noted that once the BCT approves the Conservation Agreement that track formalisation will become a requirement.
	Rubbish removal	Offset Areas free of rubbish.	**Achieved**.
Natural Regeneration	**Short term** - Grazing exclusion	Fencing has been established around all offset areas and is maintained.	**Achieved.**
	Medium term - Quality and cover of existing overstorey within Offset Area C (Lot 49 DP 751028)	A stem count of >30 stems/ha is achieved via natural recruitment in over 75% of the Natural Regeneration monitoring plots by 2023.	**Progressing towards.** Half (50%) of plots achieved stem counts >30 stems/ha and two thirds (67%) of plots achieved some measure of natural regeneration. This parameter has likely been hindered by challenging climatic conditions over the last few years.

Feature	Aspect	Performance/Completion Criteria	Assessment
	Long term - Recruitment and rehabilitation of overstorey	More than 15% cover of midstorey and overstorey species is achieved in over half of the Natural Regeneration monitoring plots by 2030.	**Not yet applicable but progressing towards.** Cover in the natural regeneration monitoring plots did not meet this threshold via natural recruitment. Future years' monitoring will conduct a more thorough study of natural assisted regeneration to best inform this criterion.
Assisted Regeneration	**Short term -** Vegetation establishment	Assisted planting program as outlined in **Section 5.2.1.2** of the LMP is commenced in 2020. Species planting list follows that which is outlined in this Section.	**Achieved in 2021**.
	Medium term - Seedling survivability	Following the implementation of the assisted planting program, more than 70% of planted seedlings have survived in each of the offset rehabilitation monitoring plots. Seedlings must have a survival rate of >70% in each planting area for at least three years post-planting before monitoring this parameter can cease.	**Achieved.**
	Long term - Overstorey restoration	A density of >30 mature stems/ha is achieved in more than 75% of the offset rehabilitation monitoring plots ten years after the initial planting year. A mature stem is a tree (overstorey species) with a diameter at breast height (dbh) greater than 10 cm.	**Not applicable.**
	Long term - Vegetation community	Long term monitoring indicates that planted vegetation is recognisable as a vegetation community consistent with the NSW determination for White Box Yellow Box Blakely's Red Gum Woodland CEEC at the end of the Quarry life.	**Not applicable.**
Habitat Material	All salvageable hollows shall be re-erected within 12 weeks from completion of staged clearing operations	Hollows are installed as required and monitored annually (condition and content) for the life of the Quarry.	**Not applicable.** No clearing works that would yield salvageable hollows have been undertaken in 2023.

Feature	Aspect	Performance/Completion Criteria	Assessment
Long Term Security of Offset Site	Security of Offset	Offset security mechanism as detailed in **Section 5.6** of the LMP is established and implemented.	**Progressing towards.** Actively liaising with BCT to resolve. Substantial progress has been made in this area and progress indicates that remaining issues around the Conservation Agreement are minor and ratification of this agreement is imminent at the time of writing.

Table 5.2 Assessment of the Rehabilitated Areas against LMP performance criteria

Feature	Aspect	Performance/Completion Criteria	Assessment
Vegetation Establishment	**Short term –** Species appropriateness	Assisted planting program commenced in 2019. Species planting list follows that which is outlined in **Section 5.2.1.2** of the LMP.	**Achieved.**
	Medium term – Seedling survivability	Following the implementation of the assisted planting program, more than 70% of planted seedlings have survived in each of the Rehabilitation Monitoring plots. Seedlings must have a survival rate of >70% in each planting area for at least three years post-planting before monitoring this parameter can cease.	**Progressing towards.** This criterion has been achieved this year, but the parameter must be monitored to ensure further it is continued to be achieved.
	Long term - Overstorey restoration	A density of >30 mature stems/ha is achieved in more than 75% of the rehabilitation monitoring plots ten years after the initial planting year. A mature stem is a tree (overstorey species) with a diameter at breast height (dbh) greater than 10 cm.	**Not applicable.**
	Long term - Vegetation community	Long term monitoring indicates that planted vegetation is recognisable as a vegetation community consistent with the NSW determination for White Box Yellow Box Blakely's Red Gum Woodland CEEC at the end of the Quarry life.	**Not applicable.**

6.0 Recommendations

The following recommendations are provided for consideration in the 2023 Annual Review:

- Perimeter fencing of the BOAs is adequate, but internal fences can be removed if practical. These may hinder the movement of native fauna throughout the BOAs. It is noted that this issue will be resolved once the Conservation Agreement is approved by the BCT.
- Daracon should continue to engage the services of a feral animal shooter for feral pest animals that frequent the BOAs (e.g., deer, pigs and wild dogs). Daracon may liaise with Local Land Services and adjoining landowners to discuss the merits of a wild dog baiting program if considered necessary.
- Weed infestations have increased across all Offset sites. This included the spread of species into areas that they had not been recorded in within past monitoring events. Further and ongoing weed management of St John's wort (*Hypericum perforatum*) and Blackberry (*Rubus fruticosus* agg.) is recommended in all offsets. It is suggested that the two small patched of prickly pear (*Opuntia* stricta) observed within Offset A and Offset C are additionally targeted while the infestation is minimal, as this species is likely to thrive as climatic conditions continue to move towards drought.
- It is noted that track access had impeded progress in pest and weed management during the 2021 and 2022 management period. Track improvements have been made along the steep hill leading away from the operational areas of the quarry. It is recommended that Daracon continues to make progress with these track upgrades where necessary to allow for services to access offsets. Pest and weed activity is high such that the condition of the offsets will worsen considerably if these issues are not attended to.
- In the Western rehabilitation area, it is recommended that tree guards be removed from any Eucalypt plantings greater than 2m to ensure their ongoing growth and safety.

7.0 Conclusion

The key findings of the 2023 biodiversity offset monitoring event are:

- Despite unsettled weather patterns and a steady decline in precipitation through the 2023 monitoring period, the vegetation seems to be resilient, and although weeds have continued to spread throughout the site, the general vegetation condition remains relatively stable.
- Feral animals continue to be a detriment to the condition of the BOAs and surrounding quarry grounds, particularly in terms of groundcover modification, browsing juvenile plants, damage of planting guards and plantings (deer, pigs) and threats to native wildlife (wild dogs).
- Weed species were widespread and should continue to be monitored. Weeds of concern in infestation areas previously discussed are recommended for targeted removal.
- Rehabilitation is progressing well in all areas.
- Despite a slight decline in overall vertebrate occupation of nestboxes this year, there was an increase in target species usage of nestboxes, as 37% of all nest boxes indicated signs of glider occupation.
- PCT benchmarks were considered good this year, with minor increases in native plant diversity in all occurrences, and some increases of native foliage cover, particularly for native grasses across almost all monitoring sites. Exotic cover declined through most PCTs, but still remains high.
- Exotic species continue to be the main hindrances to the progression of the offsets towards benchmark conditions.
- Supplementary and rehabilitation plantings are doing well in all areas with high survivorship. The largest barrier to success appears to be browsing and trampling of tubestock by introduced herbivores.
- Completion criteria were almost all either met or progressing towards, apart from exotic species coverage.

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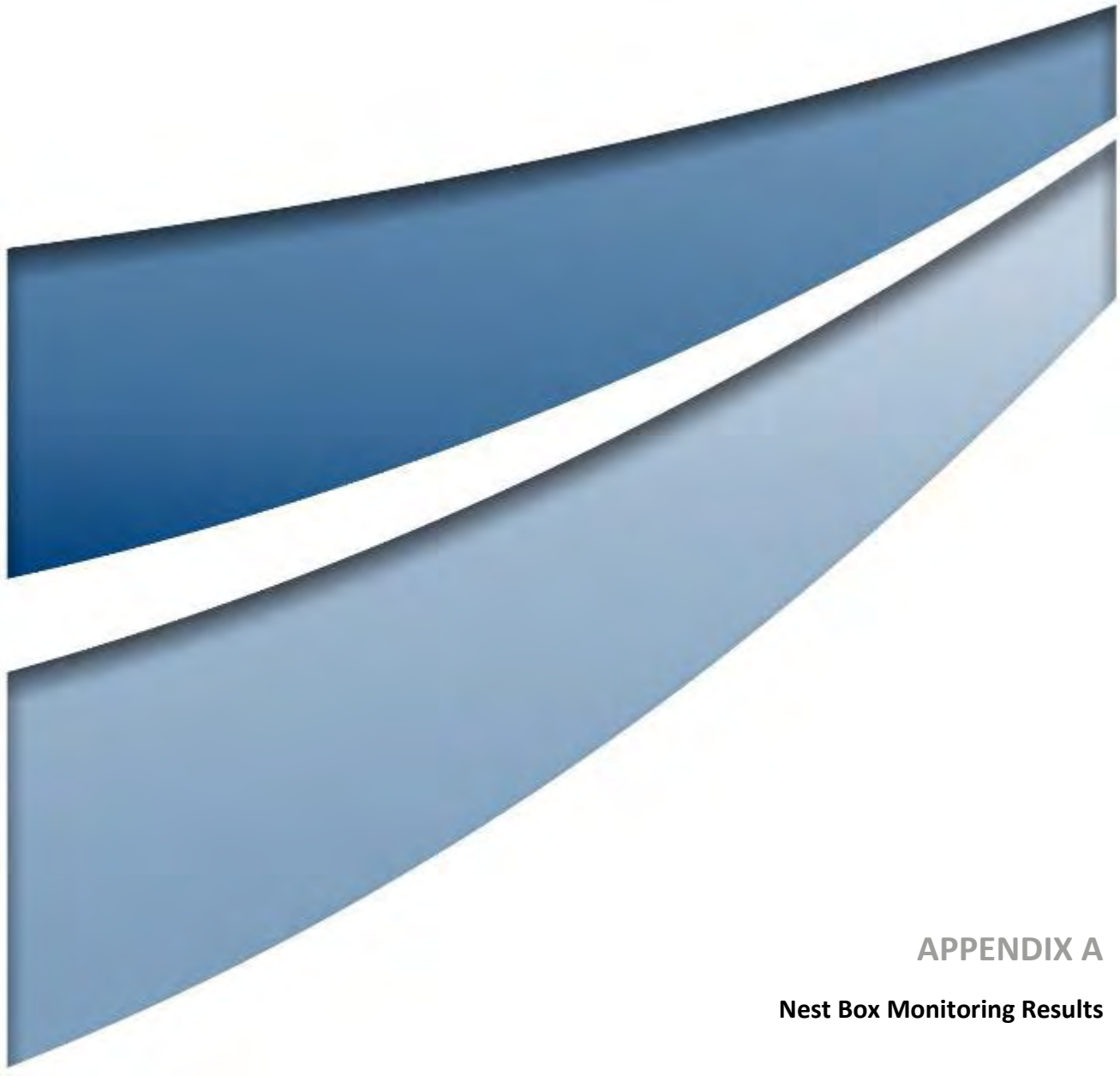

APPENDIX A

Nest Box Monitoring Results

Nest Box Monitoring Results

Date Monitored	Box Number	Tree Tag Number	Type	Contents	Condition
21/11/2023	1	175	phascogale	glider nest	good
21/11/2023	2	-	glider	glider nest, looked disused	carpet piece fallen inwards, otherwise good
21/11/2023	3	178	phascogale	glider nest	good
21/11/2023	4	177	glider	empty	good
21/11/2023	5	172	phascogale	spider webs	good
21/11/2023	6	173	microbat	empty	good
21/11/2023	7	171	glider	empty	good
21/11/2023	8	168	phascogale	arachnid	good
21/11/2023	9	169	phascogale	glider nest, arachnid	good
21/11/2023	10	164	phascogale	isopods	good
21/11/2023	11	165	glider	ant nest	good
21/11/2023	12	-	glider	empty	good, hole chewed
21/11/2023	13	-	microbat	empty, cobwebs	good
21/11/2023	14	163	microbat	isopods	good
21/11/2023	15	161	glider	glider nest, cobwebs	good
21/11/2023	16	159	microbat	empty	good
21/11/2023	17	158	phascogale	glider nest, mud wasp nest	good
21/11/2023	18	157	glider	inactive glider nest	good
21/11/2023	19	156	microbat	webs	good
21/11/2023	20	114	glider	empty	good
21/11/2023	21	113	microbat	arachnid, webs	good
21/11/2023	22	112	phascogale	spider, glider nest	good
21/11/2023	23	111	glider	glider nest	good
21/11/2023	24	115	phascogale	glider nest	good
21/11/2023	25	-	microbat	empty	good
21/11/2023	26	176	microbat	arachnid, webs	good
21/11/2023	27	160	microbat	arachnid, webs	good

APPENDIX B

Conservation Agreement Monitoring Results

Biometric Plot and Transect Data

The following abbreviations or symbols are used in the list:

NPS	number of native plant species
NOC	native overstorey cover
NMC	native midstorey cover
NGCG	native ground cover (grasses)
NGCS	native ground cover (shrubs)
NGCO	native ground cover (other)
EPC	exotic plant cover
NTH	number of trees with hollows
OR	overstorey regeneration, and
FL	total length of fallen logs (m).
LC	leaf litter cover

Tr	tree
Sh	shrub
Gr	grass
Fn	fern
Ot	other

Conservation Agreement (Offset) Biometric Transect Data

Plot Name	NPS	NOC	NMC	NGCG	NGCS	NGCO	EPC	NTH	OR	FL	Easting	Northing	Zone
PCT 496 - Yellow Box - White Box - Silvertop Stringybark - Blakely's Red Gum grass shrub woodland mainly on the Liverpool Range, Brigalow Belt South Bioregion													
Q01 (2019)	29	25	0	32	0	4	6	0	0.5	24	290019	6485647	56
Q01 (2020)	17	28	0	44	2	0	54	0	1	9	290019	6485647	56
Q01 (2021)	18	24.5	1	42	0	8	94	0	1	16	290019	6485647	56
Q01 (2022)	12	11.5	0	74	0	30	62	0	1	10	290019	6485647	56
Q01 (2023)	20	11.5	0	98	0	4	10	0	1	5	290019	6485647	56
Benchmark	**37**	**43**	**7**	**45**	**7**	**13**				**26**	-	-	-
PCT 485 - River Oak riparian grassy tall woodland of the western Hunter Valley (Brigalow Belt South Bioregion and Sydney Basin Bioregion)													
Q02 (2019)	11	16	2	22	0	8	58	1	0.5	5	289747	6486167	56
Q02 (2020)	7	15	0	0	0	6	94	1	0	9	289747	6486167	56
Q02 (2021)	4	20	1	0	0	10	100	1	0	2	289747	6486167	56
Q02 (2022)	4	11.5	1.5	52	0	18	70	1	0	0	289747	6486167	56
Q02 (2023)	6	24	1	12	0	0	88	1	0	0	289747	6486167	56
Benchmark	**28**	**38**	**10**	**35**	**10**	**8**				**36**	-	-	-
PCT 433 - White Box grassy woodland to open woodland on basalt flats and rises in the Liverpool Plains sub-region, Brigalow Belt South Bioregion													
Q03 (2019)	13	7.5	0	40	0	10	4	0	1	2	289761	6485921	56
Q03 (2020)	13	16	0	52	0	0	48	0	1	0	289761	6485921	56
Q03 (2021)	18	16.5	0.5	62	2	15	94	1	1	0	289761	6485921	56
Q03 (2022)	12	12	0	66	0	20	80	0	1	0	289761	6485921	56
Q03 (2023)	15	18	0	94	0	0	18	0	1	0	289761	6485921	56
Benchmark	**31**	**18**	**2**	**42**	**2**	**7**				**41**	-	-	-

Plot Name	NPS	NOC	NMC	NGCG	NGCS	NGCO	EPC	NTH	OR	FL	Easting	Northing	Zone
PCT 796 - Derived grassland of the NSW South Western Slopes													
Q04 (2019)	16	0	0	52	0	2	24	0	0	1	289144	6486073	56
Q04 (2020)	9	0	0	24	0	4	72	0	0	0	289144	6486073	56
Q04 (2021)	13	0	0	54	0	7	94	0	0	0	289144	6486073	56
Q04 (2022)	14	0	0	28	0	6	96	0	0	0	289144	6486073	56
Q04 (2023)	15	0	0	72	0	2	48	0	0	0	289144	6486073	56
Benchmark	**21**	**0**	**1**	**80**	**1**	**6**				**0**	-	-	-

Rehabilitation Biometric Transect Data

Plot Name	NPS	NOS	NMS	NGCG	NGCS	NGCO	EPC	NTH	OR	FL	Easting	Northing	Zone
Note – no benchmark data for comparison as rehabilitated plots do not yet resemble any PCT													
R01 (2021)	8	2	0	36	0	2	28	0	0	0	289310	6486230	56
R01 (2022)	14	2	0	76	0	12	68	0	0	0	289310	6486230	56
R01 (2023)	9	2	0	62	0	1	36	0	0	0	289310	6486230	56
R02 (2021)	10	10	2	1	2	4	92	0	1	0	288983	6486508	56
R02 (2022)	18	11	3	80	0	14	27	0	1	0	288983	6486508	56
R02 (2023)	15	11	0	68	0	14	8	0	1	0	288983	6486508	56

Doughboy Hollow BAM Biometric Data

Plot ID	COMPOSITION						STRUCTURE						FUNCTION											Easting (MGA56) GDA94	Northing (MGA56) GDA94
	Tr	Sh	Gr	Fb	Fn	Ot	Tr	Sh	Gr	Fb	Fn	Ot	Regen	Stem Classes (cm)					No. Large Trees	No. Hollow Trees	Litter (%)	Fallen Logs (m)	High Threat Weeds		
													>5	5-9	9-19	20-29	30-49	50-79							
DB01	2	0	5	4	0	1	30.2	0	5.5	0.5	0	0.1	0	0	0	0	1	0	2	0	21	0	56.9	289829	6486315
DB02	0	0	3	2	0	0	0	0	0.7	0.3	0	0	0	0	0	0	0	0	0	0	10	30	112	289927	6486445

Floristic Results

Flora specimens recorded or collected were identified using the nomenclature and keys from Harden (1992, 1993, 2000 & 2002) and Wheeler et al. (2002). Recent changes to classification as identified from PlantNET (Botanic Gardens Trust 2024) were incorporated into floristic results.

The following abbreviations and symbols are used in the table below:

PC = Percent Cover AA = Actual Abundance * = exotic species ** = high threat weed

Scientific Name	Common Name	PCT 496 - Yellow Box - White Box - Silvertop Stringybark - Blakely's Red Gum grass shrub woodland mainly on the Liverpool Range, Brigalow Belt South Bioregion		PCT 485 - River Oak riparian grassy tall woodland of the western Hunter Valley (Brigalow Belt South Bioregion and Sydney Basin Bioregion)		PCT 433 - White Box grassy woodland to open woodland on basalt flats and rises in the Liverpool Plains sub-region, Brigalow Belt South Bioregion		PCT 796 - Derived grassland of the NSW South Western Slopes		Rehabilitation Plot 1		Rehabilitation Plot 2		Doughboy Hollow Plot 1		Doughboy Hollow Plot 2	
		Q01		Q02		Q03		Q04		R01		R02		DB01		DB02	
		PC	AA	PC	AA	PC	AA	PC	AA	PC	AA	PC	AA	PC	AA	PC	AA
Acaena novazealandiae	Red Bidibid	0.1	1	0		0.1	1	0.5	300	0		0		0		0	
Anthosachne scabra	Wheatgrass	2	500	0		0		2	500	0		0		0		5	1000
Aristida ramosa	Purple Wiregrass	1	200	0		10	500	0		2	2000	0		0		0	
Aristida spp.	-	0		0		0		0		0		0		0		0.1	20
Asperula conferta	Common Woodruff	0.1	5	0		0		0		0		0		0		0	
Austrostipa aristiglumis	Plains Grass	15	2000	0		3	100	0		0		30	200	0		0	
Austrostipa scabra	Speargrass	0		0		0		0		0.2	50	0		0		0	
Austrostipa verticillata	Slender Bamboo Grass	2	50	0		0		0		0		3	100	0		0	
*Bidens pilosa**	Cobbler's Pegs	0		0		0		0		0		0.1	1	0		0	
Bothriochloa macra	Red Grass	0.1	20	0.2	100	2	250	0		10	5000	3	1000	0.2	50	0	
Bromus spp.*	-	0		0		0		0		0		0		0		0.1	50
*Bromus catharticus**	Prairie grass	0	0.01	1	100	0		0		0		0		0		5	1000
*Bromus hordeaceus**	Soft brome	0		0		0		3	250	0		0.2	200	0		0	
Capillipedium spicigerum	Scented-top Grass	0.1	25	0		0		20	500	0		0		0		0	
Cassinia spp.	-	0		0		0		0		2	6	0		0		0	
Casuarina cunninghamiana subsp. *cunninghamiana*	River Oak	0		40	1	0		0		0		0		0		0	
*Cenchrus clandestinus**	Kikuyu Grass	0		60	2000	5	100	0		0		0		40	2000	0	
*Centaurea calcitrapa**	Star thistle	0		1	25	0		0		0		0		0		0	
*Chloris gayana***	Rhodes Grass	1	50	0		0		0		0		0		0		0	
Chloris truncata	Windmill Grass	10	1000	0		15	1000	0		0		0		0		0	

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		Q01		Q02		Q03		Q04		R01		R02		DB01		DB02	
		PC	AA	PC	AA	PC	AA	PC	AA	PC	AA	PC	AA	PC	AA	PC	AA
Chrysocephalum apiculatum	Common everlasting	0		0		0.1	5	0		0		0		0		0	
*Cirsium vulgare**	Spear Thistle	0		0		0		0		0		0		0.1	2	0	
Cymbopogon refractus	Barbed Wire Grass	0		0		0		0		15	5000	0		0		0	
Cynodon dactylon	Common Couch	20	2000	0		0		0		0		0		5	1000	0	
*Cyperus eragrostis***	Umbrella Sedge	0		2	100	0		0		0		0		0		0	
Cyperus spp.		0		0		0		0		0		0		0		0.3	50
Dianella caerulea	Blu Flax-lily	0.1	15	0		0		0		0		0		0		0	
Dichanthium sericeum	Queensland bluegrass	0		0		0		0		0.3	100	0		0.1	20	0	
Dichondra repens	Kidney Weed	0.1	25	0		0.1	50	0.5	200	0		0.1	60	0.1	300	0	
*Echium plantagineum**	Pattersons curse	0		0		0		0		1	500	0		0		0	
Einadia hastata	Berry Saltbush	0		0		0		0		0		0.1	20	0		0	
Einadia nutans	Climbing Saltbush	0.1	15	0		0		0		0		0		0		0	
*Eleusine tristachya**	Goose grass	0		2	250	0		0		0		0		0		0	
*Eragrostis curvula***	African Lovegrass	0		0.5	50	30	1500	25	500	0		8	500	0		0	
Eragrostis spp.		0		0		0		0		0.2	50	0		0		0.5	100
Eucalyptus albens	White Box	0		0		10	7	2	4	0		0		0		0	
Eucalyptus albens <--> moluccana		10	3	0		0		0		0.5	8	0		0		0	
Eucalyptus blakelyi	Blakely's Red Gum	10	4	0		0		0		0		0		0		0	
Eucalyptus viminalis	Ribbon Gum	0		0		0		0		0		0		30	2	0	
*Foeniculum vulgare**	Fennel	0		0		0		0.1	30	0		0		0.1	5	0.2	50

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		Q01		Q02		Q03		Q04		R01		R02		DB01		DB02	
		PC	AA	PC	AA	PC	AA	PC	AA	PC	AA	PC	AA	PC	AA	PC	AA
Gahnia aspera	Rough Saw-sedge	0.2	150	0		0		0		0		0		0		0	
*Galium divaricatum**	Slender bedstraw	0		0		0		0		0		0		0		0.1	10
Geranium solanderi	Native Geranium	0		0.3	50	0.2	50	2	2000	0		0.5	50	0.1	20	0.1	20
Glycine tabacina	Variable Glycine	0.1	150	0		0.1	100	0.2	4000	0		0.3	500	0.1	20	0	
*Gomphocarpus fruticosus**	Narrow-leaved Cotton Bush	0		0		0		0		0.1	20	0		0		0	
*Hedera helix***	English Ivy	0		0		0		0		0		0		0.2	1	0	
Hypericum perforatum subsp. *veronense***	St John's Wort	1	250	0		3	500	50	300	0.2	200	0.2	10	0.2	100	0.2	200
*Hypochaeris radicata**	Catsear	0		0		0		0.1	1	0		0		0.1	20	0.1	50
*Jasminum officinale**	Jasmine	0		0		0		0		0		0		0.5	20	0	
Juncus spp.		0		0		0		0.5	100	0		0.1	15	0.1	10	0	
*Ligustrum lucidum***	Large-leaved privet	0		0		0		0		0		0		0.5	3	2	20
*Ligustrum sinsense***	Small leaved privet	0		0		0		0		0		0		5	10	20	100
Lobelia purpurascens	White root	0		0		0		1	1000	0		0		0		0	
Lobelia spp.		0		0		0		0		0		0		0		0	
*Lolium rigidum**	Wimmera Ryegrass	0.1	10	0.1	200	0		0.5	500	0		5	1000	0		0.3	500
*Lonicera japonica***	Japanese honeysuckle	0		0		0		0		0		0		1	100	0	
*Malu spumila**	Apple	0		0		0		0		0		0		0		2	1
*Marrubium vulgare**	White Horehound	0		2	25	0		0		0		0		0		0	
*Medicago sativa**	Lucerne	0		0		0.1	5	0		0.1	20	0	0.001	2000		0	

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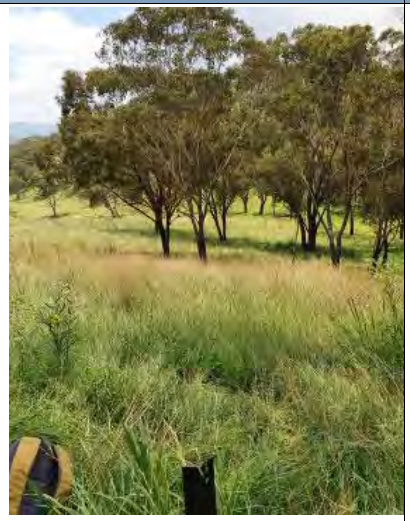
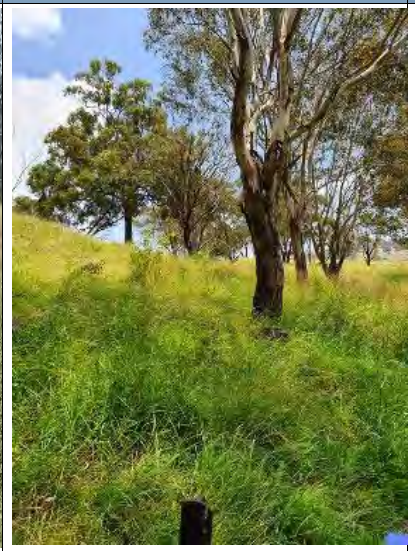
		Q01		Q02		Q03		Q04		R01		R02		DB01		DB02	
		PC	AA	PC	AA	PC	AA	PC	AA	PC	AA	PC	AA	PC	AA	PC	AA
Mentha australis	River Mint	0		0		1	200	0		0		0		0		0	
Mentha laxiflora	Forest Mint	0		0		0		0.5	200	0		0.2	200	0		0	
Microlaena stipoides	Weeping Grass	0		1	200	0		2	500	0		15	2000	0		0	
Notelaea microcarpa	Native olive	0		0		0		0		0		0		0.2	3	0	
*Opuntia stricta***	Common Prickly Pear	0.5	5	0		0		0		0		0.1	1	0		0	
Oxalis debilis	-	0		0		0		0		0		1	1000	0		0	
Oxalis perennans	-	0.1	150	0		0		0		0		0		0		0	
*Paronychia brasiliana**	Chilean Whitlow Wort	0		0		0		0		0		0		0.1	50	0	
*Paspalum dilatatum***	Paspalum	0.1	5	0		0		10	100	0		3	200	0		0	
*Petrorhagia nanteuilii**	Proliferous Pink	0		0		0		0.1	3	0		0		0.1	50	0	
*Phalaris aquatica**	Phalaris	0		0.5	20	0		0		0		0		10	500	85	10000
Phyllanthus virgatus	Wiry spurge	0.5	200	0		0		0		0		0		0		0	
*Phytolacca octandra**	Inkweed	0		10	25	0		0		0		0		0		0	
*Plantago lanceolata**	Lamb's tongues	0		0.1	10	0.1	1	0.1	1	0		0		0.2	200	0.1	20
Poa labillardieria	Tussuck grass	0		0		2	250	3	200	0		0		0		0	
Poaceae indeterminate	-	0		0		0		0		1	1000	0		0		0	
*Rosa rubiginosa***	Sweet briar	0		0		0		0		0		0		0.2	2	0	
*Rubus fruiticosus***	Blackberry complex	0		0		0		1	1	0		0		0		0	
Rumex brownii	Swamp Dock	0		0		0		0.1	5	0		0		0.1	20	0	
Rytidosperma spp.	-	0		0.3	110	0.1	25	0		0		0.1	20	0		0	
*Salix babylonica***	Weeping willow	0		0		0		0		0		0		1	2	5	2
Solanum spp.	-	0		5	2	0		0		0		0		0		0	

Scientific Name	Common Name	PCT 496 - Yellow Box - White Box - Silvertop Stringybark - Blakely's Red Gum grass shrub woodland mainly on the Liverpool Range, Brigalow Belt South Bioregion		PCT 485 - River Oak riparian grassy tall woodland of the western Hunter Valley (Brigalow Belt South Bioregion and Sydney Basin Bioregion)		PCT 433 - White Box grassy woodland to open woodland on basalt flats and rises in the Liverpool Plains sub-region, Brigalow Belt South Bioregion		PCT 796 - Derived grassland of the NSW South Western Slopes		Rehabilitation Plot 1		Rehabilitation Plot 2		Doughboy Hollow Plot 1		Doughboy Hollow Plot 2	
		Q01		Q02		Q03		Q04		R01		R02		DB01		DB02	
		PC	AA	PC	AA	PC	AA	PC	AA	PC	AA	PC	AA	PC	AA	PC	AA
Sporobolus creber	Slender Rat's Tail Grass	0		0		0.1	20	0		0		0		0		0	
Themeda triandra	Kangaroo grass	0.5	25	0		1	150	0		0		0		0.1	30	0	
*Tradescantia fluminensis***	Tradescantia	0		0.5	25	0		0		0		0		0		0	
*Trifolium arvense**	Haresfoot Clover	0		0		0		0		3	5000	0		0		0	
*Trifolium repens**	White Clover	0		0		0		0.1	50	0		0		0		0	
*Verbena bonariensis**	Purpletop	0		0		0		0.1	50	0		0		0.1	30	0	
Verbena rigida var. *rigida**	Veined Verbena	0.1	5	0		0		0		0		0		0		0	
Veronica plebeia	Trailing Speedwell	0		0		0.2	200	0		0		0		0		0	
Vicia sativa	Common vetch	0		0.1	2	0		0.1	5	0.1	5	0.1	15	0.1	3	0.1	20
Vittadinia cuneata	Fuzzweed	0		0.5		0		0		0		0.5	10	0		0	
Vittadinia tenuissima	Western New Holland Daisy	0.1	10	0		0.1	20	0.5	25	0		0		0		0	
Wahlenbergia communis	Tufted Bluebell	0		0		0		0.1	15	0		0.1	10	0		0	

Photo Monitoring - Offset

Plot Q01: Blakelys Red Gum (+/- Yellow Box) Dry Sclerophyll Grassy Woodlands/Open Woodland				
North 2019	North 2020	North 2021	North 2022	North 2023
				
East 2019	East 2020	East 2021	East 2022	East 2023
				

Plot Q01: Blakelys Red Gum (+/- Yellow Box) Dry Sclerophyll Grassy Woodlands/Open Woodland

South 2019	South 2020	South 2021	South 2022	South 2023
				
West 2019	**West 2020**	**West 2021**	**West 2022**	**West 2023**
				

Plot Q02: River Oak (*Casuarina cunninghamiana*) Dry Sclerophyll Woodland

North 2019	North 2020	North 2021	North 2022	North 2023
				Photos not taken In 2023

East 2019	East 2020	East 2021	East 2022	East 2023
				Photos not taken in 2023

Plot Q02: River Oak (*Casuarina cunninghamiana*) Dry Sclerophyll Woodland

South 2019	South 2020	South 2021	South 2022	South 2023
				Photos not taken in 2023
West 2019	**West 2020**	**West 2021**	**West 2022**	**West 2023**
				Photos not taken in 2023

Plot Q03: White Box (*Eucalyptus albens*) and Rough barked Apple (*Angophora floribunda*) Dry Sclerophyll Grassy Woodland

North 2019	North 2020	North 2021	North 2022	North 2023
				

Plot Q03: White Box (*Eucalyptus albens*) and Rough barked Apple (*Angophora floribunda*) Dry Sclerophyll Grassy Woodland

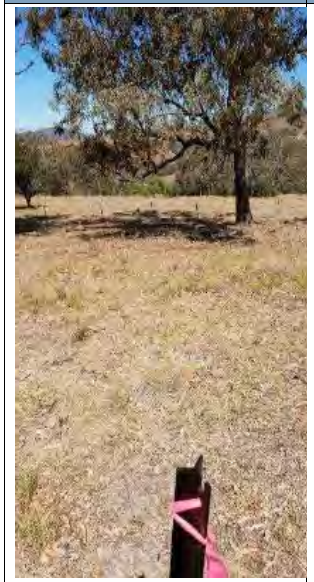
East 2019	East 2020	East 2021	East 2022	East 2023
				

Plot Q03: White Box (*Eucalyptus albens*) and Rough barked Apple (*Angophora floribunda)* Dry Sclerophyll Grassy Woodland				
South 2019	South 2020	South 2021	South 2022	South 2023
				

Plot Q03: White Box (*Eucalyptus albens*) and Rough barked Apple (*Angophora floribunda*) Dry Sclerophyll Grassy Woodland				
West 2019	West 2020	West 2021	West 2022	West 2023
				

North 2019	North 2020	North 2021	North 2022	North 2023
				

Plot Q04: Derived Native Grassland

East 2019	East 2020	East 2021	East 2022	East 2023
				

Plot Q04: Derived Native Grassland			
South 2019 (no picture taken 2020)	South 2021	South 2022	South 2023
			

Photo Monitoring – Rehabilitation

Plot R01: Southern Rehabilitation		
North 2021	North 2022	North 2023
		
East 2021	East 2022	East 2023
		

Plot R01: Southern Rehabilitation		
South 2021	South 2022	South 2023
		
West 2021	West 2022	West 2023
		

Plot R02: Western Rehabilitation		
North 2021	North 2022	North 2023 (wooden stake unable to be located)
		
East 2023	East 2022	East 2023
		

Plot R02: Western Rehabilitation		
South 2021	South 2022	South 2023
		
West 2021	West 2022	West 2023
		

Photo Monitoring – Doughboy Hollow Rehabilitation Area (Baseline)

Plot DB01			
North 2023	East 2023	South 2023	West 2023
			

Plot DB02			
North 2023	East 2023	South 2023	West 2023
			

APPENDIX C

Pest Control Records 2023

Shaun's Roo & Deer Shooting

Phone: 0431 034 447
E-mail: ss181984@hotmail.com

Shaun Stothard
33 Beauty Point Road,
Morisset,
NSW, 2264

To whom it may concern, **12th July, 2023**

Please find attached a brief outline of vermin harvested during the period January-June 2023:

TOTALS:

- Fallow Deer - 78
- Feral Cats - 3
- Foxes - 0
- Wild pigs - 45

Regards,

Shaun Stothard

Shaun's Roo & Deer Shooting

Phone: 0431 034 447
E-mail: ss181984@hotmail.com

Shaun Stothard
33 Beauty Point Road,
Morisset,
NSW, 2264

To whom it may concern, **15th January, 2024**

Please find attached a brief outline of vermin harvested during the period July-December 2023:

TOTALS:

- Fallow Deer – 30
- Feral Cats – 3
- Foxes – 0
- Wild pigs - 23

Regards,

Shaun Stothard

umwelt
Environmental & Social
Consultants

Umwelt (Australia) Pty Limited

T| 1300 793 267 E| info@umwelt.com.au www.umwelt.com.au

Appendix 7 Road Safety Audit

Table 1 – Ardglen Quarry Road Safety Audit (RSA) – Summary of responses March 2023

RSA report identification number	Location / category	Description of risk to road safety	Specific actions Daracon commit to undertake	Completion date (if complete) with comments	Evidence of completion	Final status update as at 28th June 2023
1	Intersection of Main Street and New England Highway Northbound and Southbound Delineation	The approach to the intersection of Main Street and New England Highway is missing delineation (i.e. RRPM's) and has faded line marking. This may increase the likelihood of readability issues for a driver. The likelihood of this risk may increase at night and / or adverse weather conditions. This may result in vehicle crashes and injury to occupants of a vehicle(s).	RMS Response – New England Highway (NEH) work will be addressed by works for Daracon	Final tasks completed by TfNSW in May and June 2023. Completed.	 	As of the 28th June 2023, we've completed the access road widening and construction work (as approved by LPSC) and TfNSW recently completed the New England Highway asphalt replacement scope as shown in the images.
2	New England Highway Southbound Delineation	The existing right turn bay into Main Street is missing right turn pavement arrows, which may lead to readability issues for approaching vehicles. The likelihood of this risk may increase at night and / or adverse weather conditions. This may confuse oncoming drivers for the purpose of lane and cause late lane change decisions. This may result in vehicle crashes and injury to occupants of a vehicle(s).	RMS Response – **RMS to install missing Right Turn Arrows**. RMS to arrange to be included in this year's AC linemarking program.	Completed by RMS prior to July 2019.		N/A

RSA report identification number	Location / category	Description of risk to road safety	Specific actions Daracon commit to undertake	Completion date (if complete) with comments	Evidence of completion	Final status update as at 28th June 2023
3	New England Highway Southbound Traffic signs	The advanced warning signage on approach to Main Street appears damaged, does not provide advanced warning to approaching vehicles, and has a reduced readability due to sightlines being obscured on the horizontal curve approach. This may lead to driver confusion and increase the likelihood of drivers slowing too early prior to the intersection and may result in vehicle crashes and serious injury to occupants of a vehicle(s).	RMS Response – **RMS to repair signs** from Routine Maintenance	Completed by RMS prior to July 2019.		N/A
4	Intersection of Main Street and New England Highway Northbound and Southbound Delineation and Road pavement	At the intersection New England Highway and Main Street there is a combination of damaged / deformed pavement, loose gravel in the mouth of the intersection and faded delineation. The faded delineation may cause drivers readability issues. The loose gravel and damaged pavement may increase the likelihood of vehicles being unable to gain the required traction when entering Ardglen Road from New England Highway. The likelihood of this risk may increase during adverse weather conditions. This may result in vehicle crashes and serious injury to occupants of a vehicle(s).	RMS Response – New England Highway (NEH) work will be addressed by works for Daracon.	Complete as at the 28th June 2023. Completed.		As of the 28th June 2023, we've completed the access road widening and construction work (as approved by LPSC) and TfNSW recently completed the New England Highway asphalt replacement scope as shown in the image.
5	Main Street South of the Intersection on the outside of the curve Northbound Road pavement	At the Main Street / rail site compound access and in front of the existing w-beam safety barrier there is loose gravel on the outside of the horizontal curve. This may lead to reduced skid resistance for an errant vehicle. The likelihood of this risk may increase at night and / or adverse weather conditions. This may result in vehicle crashes and serious injury to occupants of a vehicle(s).	As agreed with LPSC representative, the loose gravel on the outside of the curve will be removed by appropriate means by Daracon.	Daracon completed this on the 3rd April 2019 with street sweeper on site. Additional gravel removal on the 11th July 2019 before the line marking was installed.		N/A

RSA report identification number	Location / category	Description of risk to road safety	Specific actions Daracon commit to undertake	Completion date (if complete) with comments	Evidence of completion	Final status update as at 28th June 2023
6	Main Street – South of the intersection of New England Highway Northbound and Southbound Roadside hazards	200m along Main Street from the intersection of New England highway, there is an existing culvert with steep embankments within the clear zone. The combination of narrow shoulder widths, steep batters, culvert headwalls within the clear zone, may limit a driver's manoeuvrability to avoid striking an object or have a reduced ability to gain control of their vehicle and strike objects within the clear zone. Narrow shoulders may also limit the available road width for wide vehicle loads and restrict vehicles in the opposing direction. This may increase the likelihood of drivers encroaching into the opposing travel lane and / or vehicles driving within the road shoulder / verge area to avoid a stationary object on the road. This may result in drivers striking the object or another object within the clear zone and lead to rapid deceleration of the vehicle. This may result in serious injury (not limited to) to occupants of a vehicle(s).	As agreed with LPSC representative, Daracon proposes to install a temporary barrier (type F concrete or similar) to highlight the presence of the existing culvert and minimise the likelihood of interaction with the roadside hazard. Subject to the ongoing operation of the quarry, Daracon may choose to install a permanent barrier (guardrail or similar) at some time in the future.	Completed on the 24th March 2023.		Guardrail complete as shown below. 
7	Main Street – Rail site compound access Northbound Road alignment and cross section and delineation	Approximately 150m from the intersection of New England Highway along Main Street there is an access track to a rail site compound. At the access there is a lack of delineation on the horizontal curve. This may give the oncoming driver the impression that the Main Street continues through rather the traveling to the right, especially at night. This may cause a driver to make a late change in direction. The combination of loose gravel on the outside of the curve and the late change in direction may result in crashes with other vehicles and result in injury to occupants of a vehicle(s).	As agreed with LPSC representative, Daracon proposes to install additional guide posts (or similar) to delineate the outside of the horizontal curve.	Completed on the 26th March 2019.		N/A

RSA report identification number	Location / category	Description of risk to road safety	Specific actions Daracon commit to undertake	Completion date (if complete) with comments	Evidence of completion	Final status update as at 28th June 2023
8	Main Street Northbound and Southbound Road pavement And Road alignment and cross section	The road carriageway width does not appear suitable for vehicles to pass (i.e. trucks passing other trucks and / or cars). The travel lane widths may limit a driver's manoeuvrability and increase the likelihood of readability issues to oncoming vehicles. Narrow travel lane may also limit the available road width for wide vehicle loads and restrict vehicles in the opposing direction. This may result in drivers striking oncoming objects or another object within the clear zone and lead to rapid deceleration of the vehicle. This may result in injury to occupants of a vehicle(s).	Please also refer to LPSC point #2 below. Although the AADT would be less than 300 vehicles per day including the quarry operating at 500,000T by road per year as proposed (approximately 60 outbound and 60 inbound truck movements), it was agreed with LPSC to install additional line marking only at the curves either end of Main St. The straight section of Main St will remain with no line marking. All existing line marking will also be renewed if not completed recently by LPSC. An additional control that has been implemented is the self-imposed mandatory speed limit of 40kph from the New England Highway to the Quarry entrance for all trucks.	Completed on the 11th July 2019.	 	N/A
9	Main Street Intersection with Ardglen Road Northbound and Southbound Traffic signs	On Main Street approach to Ardglen Road, the existing speed zone repeater signage appears faded. This may increase the likelihood of readability issues for drivers, and increase the likelihood of a driver failing to travel to the sign posted speed limit. The likelihood of this risk may increase at night and / or adverse weather conditions. This may lead to vehicle crashes and injury to occupants of a vehicle(s).	As agreed with LPSC representative, Daracon proposes to install new speed limit signage as the existing sign is faded.	Completed on the 20th March 2019.		N/A
10	Main Street Approaching the Intersection with Ardglen Road Northbound and Southbound Roadside hazards	On Main Road approach to Ardglen Road, there is an existing power pole and fence posts within the clear zone. Errant vehicles at these locations may have a reduced ability to gain control of their vehicle and strike the power pole or fence post within the clear zone which may lead to rapid deceleration of the vehicle. This may be due to the combination of horizontal and / or vertical alignment of the road and / or drivers swerving to avoid striking an animal (i.e. animal carcass). The likelihood of this risk may increase at night and / or adverse weather conditions. This may result in vehicle crashes and injury to occupants of a vehicle(s), not limited to.	As agreed with LPSC representative, Daracon proposes to install delineation in the form of additional guideposts adjacent to the roadway to highlight the presence of the existing power pole.	Completed on the 26th March 2019.		N/A

RSA report identification number	Location / category	Description of risk to road safety	Specific actions Daracon commit to undertake	Completion date (if complete) with comments	Evidence of completion	Final status update as at 28th June 2023
11	Main Street Approaching the Intersection with Ardglen Road Northbound and Southbound Pavement	Approximately 65m along Main Road from the intersection of Main Road and High Road, there is loose gravel on the outside of the horizontal curve. This may lead to reduced skid resistance for an errant vehicle. The likelihood of this risk may increase at night and / or adverse weather conditions. This may result in vehicle crashes and serious injury to occupants of a vehicle(s).	As agreed with LPSC representative, the loose gravel on the outside of the curve will be removed by appropriate means by Daracon.	Completed on the 3rd April 2019 with street sweeper on site. Additional gravel removal occurred on the 11th July 2019 before the line marking was installed.		N/A
12	Main Street Intersection with High Street Delineation	At the intersection of Main Street and High Street, the existing delineation is faded. This may lead to readability issues for a driver and increase the likelihood of a vehicle failing to give way at the intersection. The likelihood of this risk may increase at night and / or adverse weather conditions. This may lead to vehicle crashes and injury to occupants of a vehicle(s).	As agreed with LPSC representative, Daracon proposes to refresh the existing line marking.	Completed on the 11th July 2019.	 	N/A

RSA report identification number	Location / category	Description of risk to road safety	Specific actions Daracon commit to undertake	Completion date (if complete) with comments	Evidence of completion	Final status update as at 28th June 2023
13	Main Street Intersection with High Street Westbound Traffic signs	Approaching the intersection of Main Street and High Street from the south eastern side traveling west there is a missing Stop sign. This may increase the likelihood of readability issues for drivers and lead to drivers failing to stop to oncoming vehicles. This may increase the likelihood of vehicle crashes, especially during adverse weather conditions. This could lead to crashes with other vehicles, thus may result in serious injury to occupants of a vehicle(s).	As agreed with LPSC representative, Daracon proposes to reinstate the existing stop sign.	Completed on the 20th March 2019.		N/A
14	High Street Approach to St Stephen Street intersection Westbound Traffic signs	On the south eastern side of the intersection of High Street and St Stephen Street, the advanced warning of T-intersection signage is loose, which has caused the sign to point in the wrong direction. This may increase the likelihood of readability issues for drivers and lead to drivers failing to negotiate the intersection. This may increase the likelihood of vehicle crashes, especially during adverse weather conditions. This could lead to crashes with other vehicles, thus may result in serious injury to occupants of a vehicle(s).	As agreed with LPSC representative, Daracon proposes to reinstate the existing T intersection sign.	Completed on the 26th March 2019.		N/A
15	High street Rail overpass bridge Eastbound and Westbound Road alignment and cross section	Traveling west along High Street towards the rail overpass bridge, the travel lanes appear to narrow and there is a kink in the alignment of the road. The narrow travel lane widths may limit a driver's manoeuvrability and increase the likelihood of readability issues to oncoming vehicles. Narrow travel lane may also limit the available road width for wide vehicle loads and restrict vehicles in the opposing direction. This may result in drivers striking oncoming vehicles or safety barriers and lead to rapid deceleration of the vehicle. This may result in serious injury (not limited to) to occupants of a vehicle(s).	As agreed with LPSC representative, all existing line marking will be renewed if not completed recently by LPSC. An additional control that has been implemented is the self-imposed mandatory speed limit of 40kph from the New England Highway to the Quarry entrance for all trucks. Appropriate delineation already exists along the guardrail.	Self-imposed 40 kph speed limit imposed immediately. The line marking was completed on the 11th July 2019. Completed.		N/A

RSA report identification number	Location / category	Description of risk to road safety	Specific actions Daracon commit to undertake	Completion date (if complete) with comments	Evidence of completion	Final status update as at 28th June 2023
16	High Street Approach to St Stephen Street Intersection Eastbound and Westbound Delineation	At the intersection of High Street and St Stephen Street, the existing delineated is faded. This may lead to readability issues for a driver and increase the likelihood of a vehicle failing to give way / stop at the intersection. The likelihood of this risk may increase at night and / or adverse weather conditions. This may lead to vehicle crashes and injury to occupants of a vehicle(s).	As agreed with LPSC representative, all existing line marking will be renewed by Daracon if not completed recently by LPSC.	Completed on the 11th July 2019.	 	N/A
17	St Stephen Street Northbound and Southbound Road alignment and cross section	The road carriageway width along St Stephens Street does not appear suitable for vehicles to pass (i.e. trucks passing other trucks and / or cars). The travel lane widths may limit a driver's manoeuvrability and increase the likelihood of readability issues to oncoming vehicles. Narrow travel lane may also limit the available road width for wide vehicle loads and restrict vehicles in the opposing direction. This may result in drivers striking oncoming vehicles or objects within the clear zone and lead to rapid deceleration of the vehicle. This may result in serious injury (not limited to) to occupants of a vehicle(s).	As agreed with LPSC representative, Daracon will consult with the three residents along Warra and St Stephen Streets to discuss the potential installation of convex mirrors at strategic locations and will install as agreed. Daracon has also implemented a self-imposed mandatory speed limit of 40kph from the New England Highway to the Quarry entrance as well as a mandatory "call up" protocol for St Stephens and Warra St's as detailed in the TTMP.	Complete as at the 24th March 2023.	 	Road widening complete as shown below. 

RSA report identification number	Location / category	Description of risk to road safety	Specific actions Daracon commit to undertake	Completion date (if complete) with comments	Evidence of completion	Final status update as at 28th June 2023
18	St Stephen Street Intersection with Warra Street Northbound and Southbound Road alignment and cross section And Road Pavement	Traveling along St Stephens Street towards Warra Street there is deteriorated / damaged pavement with excessive road cross fall, narrow lane widths and sight distance restrictions. The combination of all the above elements may limit a driver's manoeuvrability and increase the likelihood of readability issues to oncoming vehicles. Narrow travel lane may also limit the available road width for wide vehicle loads and restrict vehicles in the opposing direction. This may result in drivers striking oncoming objects or another object within the clear zone and lead to rapid deceleration of the vehicle. This may result in serious injury (not limited to) to occupants of a vehicle(s).	Refer to RSA CAR #17.	Refer to RSA CAR #17.		N/A
19	Warra Street Northbound and Southbound Road alignment and cross section	The road carriageway width along Warra Street does not appear suitable for vehicles to pass (i.e. trucks passing other trucks and / or cars). The travel lane widths may limit a driver's manoeuvrability and increase the likelihood of readability issues to oncoming vehicles. Narrow travel lane may also limit the available road width for wide vehicle loads and restrict vehicles in the opposing direction. This may result in drivers striking oncoming vehicles or objects within the clear zone and lead to rapid deceleration of the vehicle. This may result in serious injury (not limited to) to occupants of a vehicle(s).	Refer to RSA CAR #17.	Refer to RSA CAR #17.		N/A
20	Warra Street Near the quarry entrance Southbound Pavement And Road alignment And cross section	Near the entrance to the quarry and part of Warra Road the existing pavement is deteriorated and shoulder show evidence of erosion. This may lead to soft shoulders and may be unstable for heavy vehicle to use if divers need to move their vehicle to avoid oncoming traffic. This may result in injury to occupants of a vehicle(s), not limited to.	As agreed with LPSC representative, Daracon proposes to investigate and repair the shoulder as described in the RSA.	Completed 20th March 2019.		Road widening complete as shown below. 

RSA report identification number	Location / category	Description of risk to road safety	Specific actions Daracon commit to undertake	Completion date (if complete) with comments	Evidence of completion	Final status update as at 28th June 2023
21	Warra Street Northbound and Southbound Roadside hazards	Along Warra Street the auditors observed trees within clear zone as well as narrow carriageway. Errant vehicles at these locations may have a reduced ability to gain control of their vehicle and strike the trees within the clear zone which may lead to rapid deceleration of the vehicle. This may be due to the narrow carriageway width of the road and / or drivers swerving to avoid striking oncoming vehicles. The likelihood of this risk may increase at night and / or adverse weather conditions. This may result in vehicle crashes and injury to occupants of a vehicle(s), not limited to.	As agreed with LPSC representative, Daracon proposes to install delineation in the form of additional guideposts adjacent to the roadway to highlight the presence of the trees. Daracon has implemented a self-imposed mandatory speed limit of 40kph from the New England Highway to the Quarry entrance as well as a mandatory "call up" protocol for St Stephens and Warra St's as detailed in the TTMP.	Complete as at the 24th March 2023.		Guardrail complete as shown below. 
22	Warra Street Northbound and Southbound Roadside hazards	Approximately 50m from the entrance of the quarry there is an existing culvert headwall with drop-off within the clear zone. Errant vehicles at these locations may have a reduced ability to gain control of their vehicle impact with the existing headwall and / or surrounding objects within the clear zone. This may be due to the narrow carriageway width of the road and / or drivers swerving to avoid striking oncoming vehicles. The likelihood of this risk may increase at night and / or adverse weather conditions. This may result in vehicle crashes and serious injury to occupants of a vehicle(s).	As agreed with LPSC representative, Daracon proposes to install a temporary barrier (type F concrete or similar) to highlight the presence of the existing culvert and minimise the likelihood of interaction with the roadside hazard. Additionally, **LPSC have committed to investigating the option of extending the existing storm water pipe** to permit widening of the formation thus eliminating the roadside hazard.	Complete as at the 24th March 2023.		Road widening and guardrail complete as shown below. 

RSA report identification number	Location / category	Description of risk to road safety	Specific actions Daracon commit to undertake	Completion date (if complete) with comments	Evidence of completion	Final status update as at 28th June 2023
23	Warra Street Quarry entrance Northbound and Southbound Road alignment and cross section	At the site entry of the quarry, the entry appears narrow, lack of carriageway width for drivers to turn around as well as lack of restriction signage / no through road. This may lead to diver frustration and confusion which may contribute to diver error. The likelihood of this risk may increase at night and / or adverse weather conditions. This may result in vehicle crashes and serious injury to occupants of a vehicle(s).	As agreed with LPSC representative, Daracon has implemented a self-imposed mandatory speed limit of 40kph from the New England Highway to the Quarry entrance as well as a mandatory "call up" protocol for St Stephens and Warra St's as detailed in the TTMP.	Complete as at the 24th March 2023.	 	Road widening and guardrail complete as shown below. 
24	Warra Street Northbound and Southbound Delineation	It was noted that along Warra Street there is a lack of delineation. This may increase the likelihood of readability issues for drivers. The likelihood of this risk may increase at night and / or adverse weather conditions. This may result in vehicle crashes and injury to occupants of a vehicle(s).	As agreed with LPSC representative, Daracon proposes to install delineation in the form of additional guideposts adjacent to the roadway.	Complete as at the 24th March 2023.		Road widening and guardrail complete as shown below. 

RSA report identification number	Location / category	Description of risk to road safety	Specific actions Daracon commit to undertake	Completion date (if complete) with comments	Evidence of completion	Final status update as at 28th June 2023
LPSC #1	Either side of the rail overpass bridge	The two 'T' intersections either side of the rail overpass bridge are not your normal 'T' intersections in that the approach roads to the top of the 'T' have right away, whereas the thru road normally has right of way. Whilst 'Give Way' and 'Stop Signs' along with line marking (that needs maintaining) exists, I think advance warning 'Give Way Sign Ahead' and 'Stop Sign Ahead' signs (W3-1B and W3-2B) should be considered to forewarn road users along High Street and Swinging Ridges Road as the thru road(s).	Daracon agree to install additional advance warning 'Give Way Sign Ahead' and 'Stop Sign Ahead' signs (W3-1B and W3-2B) to forewarn road users along High Street and Swinging Ridges Road as the thru road(s)	Completed on the 20th March 2019.	 	N/A

RSA report identification number	Location / category	Description of risk to road safety	Specific actions Daracon commit to undertake	Completion date (if complete) with comments	Evidence of completion	Final status update as at 28th June 2023
LPSC #2	Main Street	There is no centreline delineation along the Ardglen Road (it is being called Main Street in the RSA). High Street has centreline marking (albeit it is very faded and needs redoing). Given there are 2 curves along the Ardglen Road, the RSA should identify the lack of centreline marking along this road in greater detail.	Although the AADT would be less than 300 vehicles per day including the quarry operating at 500,000T by road per year as proposed (approximately 60 outbound and 60 inbound truck movements), it was agreed with LPSC to install additional line marking only at the curves either end of Main St. The straight section of Main St will remain with no line marking. All existing line marking will also be renewed if not completed recently by LPSC. An additional control that has been implemented is the self-imposed mandatory speed limit of 40kph from the New England Highway to the Quarry entrance for all trucks.	Completed on the 11th July 2019.	  	N/A
LPSC #3	Main Street	The advance 'T' junction warning sign on Ardglen Road on approach to High Street does not depict the road alignment on approach to the intersection. The approach to the intersection has a horizontal curve between the Advanced intersection Warning Sign and the intersection. The sign should be changed to a Curved Intersection (W2-14B) sign.	Daracon agrees to change the advance 'T' junction warning sign on Ardglen Road on approach to High Street to a Curved Intersection (W2-14B) sign.	Completed on the 3rd April 2019.		N/A

RSA report identification number	Location / category	Description of risk to road safety	Specific actions Daracon commit to undertake	Completion date (if complete) with comments	Evidence of completion	Final status update as at 28th June 2023
LPSC #4	Warra Street	There is a deficiency in Safe Intersection Sight Distance (SISD) at and for the second house along Warra Street on the right as you head towards the quarry. AUSTROADS stipulates the SISD for 50km/h is 90 metres. There would only be 40m at this location. The RSA does not identify this deficiency.	Refer to RSA CAR #17.	Refer to RSA CAR #17.		N/A
Other observation #1	Main Street	Approximately 370m along Main Street from the intersection of New England Highway, the pavement surface appears deformed / subsided (near the abandoned house).	Daracon continues to monitor for damage and /or further deterioration of the pavement in this area and repairs as required in accordance with the current maintenance arrangement with Liverpool Plains Shire Council (LPSC).	Ongoing in accordance with LPSC agreement. RSA item therefore complete.		Ongoing for the duration of the quarry operations.
Other observation #2	St Stephen Street and Main Street	There is a gap in the existing w-beam safety barrier for rail corridor access at the intersection of St Stephen Street and High Street. The auditors observed that the point of need for safety barrier may not protect an errant vehicle from the hazard at this location.	Ardglen Quarry has been operating as a hard rock quarry for over 100 years and Buttai Gravel (Daracon) has owned and operated Ardglen Quarry since 2005 after purchasing the quarry from the State Rail Authority. Sometime following Daracon's purchase of the quarry, ARTC commenced work on the construction of the rail overpass bridge which was completed sometime before 2009 (and whilst the quarry was still operating). With respect to the design and construction of the new rail overpass bridge, access road and associated structures, Daracon were not involved in the process and had no influence over the design parameters associated with the safety barriers associated with the new bridge and access roads. **However, Daracon and LPSC have recently renewed the line marking in this location which, combined with the additional signage and guideposts installed as well as the self-imposed mandatory speed limit of 40kph from the New England Highway to the Quarry entrance for all trucks, has significantly reduced the risk of an errant vehicle in this location.**	Completed on the 11th July 2019.	 Note – The dirt present on the road surface (as shown in the above image) was the result of LPSC unsealed road maintanence occurring along Swinging Ridges Rd and was in no way associated with truck movements to or from Ardglen Quarry.	N/A

RSA report identification number	Location / category	Description of risk to road safety	Specific actions Daracon commit to undertake	Completion date (if complete) with comments	Evidence of completion	Final status update as at 28th June 2023
Other observation #3	Rail overpass bridge	The audit makes no provision for allowing safe pedestrian access over High Street rail overpass bridge (complaint received August 2018). Provide a response action to address this issue.	Ardglen Quarry has been operating as a hard rock quarry for over 100 years. Buttai Gravel (Daracon) has owned and operated Ardglen Quarry since 2005, after purchasing the quarry from the State Rail Authority. Sometime following Daracon's purchase of the quarry, ARTC commenced work on the construction of the rail overpass bridge which was completed sometime before 2009 (and whilst the quarry was still operating). With respect to the design and construction of the new rail overpass bridge, Daracon were not involved in the process and had no influence over the design parameters associated with pedestrian movements at that location. Daracon are therefore unable to comment on the design parameters used as part of the rail bridge construction. **Although pedestrian activity through the township of Ardglen is irregular and limited, Daracon is however able to inform ALL truck drivers of the need to be vigilant to the increased presence of pedestrians and vehicles associated with the school bus drop offs, collections and also pedestrians utilising the rail bridge. Daracon are also willing to liaise with the local residents to understand and appropriately manage pedestrian movements across the bridge as required.** The Code of Conduct (CoC) and Traffic and Transport Management Plan (TTMP) were updated, resubmitted and approved by DPE during 2022.	Complete as at the 5th August 2019.		N/A

Appendix 8 2023 Daracon newsletter

Ardglen Quarry Community Newsletter – February 2023

We wish all members of Ardglen and the surrounding community a Happy New Year and best wishes for 2023.

This year we are pleased to advise that **Geoff Reeves** will be returning to Ardglen Quarry as Quarry Manager to take on the challenge of bringing the site back into operation. We're hopeful that once the quarry is operational again, it should help to alleviate some of the strain on construction material supplies within the Hunter and Liverpool Plains areas, following the unprecedented flooding events and subsequent damage to local roads and infrastructure throughout the regions.

Following the approval of the consent modification in 2021, we continue to progress with the various planning actions required to facilitate the efficient operation of the site and commence work in the 'Approved Extension Area' (as shown in the image below) soon.

One of the first tasks to re-open the quarry is the widening of Warra, St Stephens and Main Streets Ardglen. This work commenced recently in consultation with Liverpool Plains Shire Council and is likely to continue for a number of weeks. Additionally, we also plan to undertake some preparatory site works in the 'Existing Quarry Pit' and adjacent areas in March 2023. Upon completion of the road widening and preparatory works, we then plan to recommence the export of existing material from the quarry before then entering the 'Approved Extension Area'. During this period, selected quarry materials should then become available for use by Local Councils, Transport for NSW and the general public.

Once we have more detailed information regarding the transportation of existing material from the quarry and/or quarrying operations in the 'Approved Extension Area',

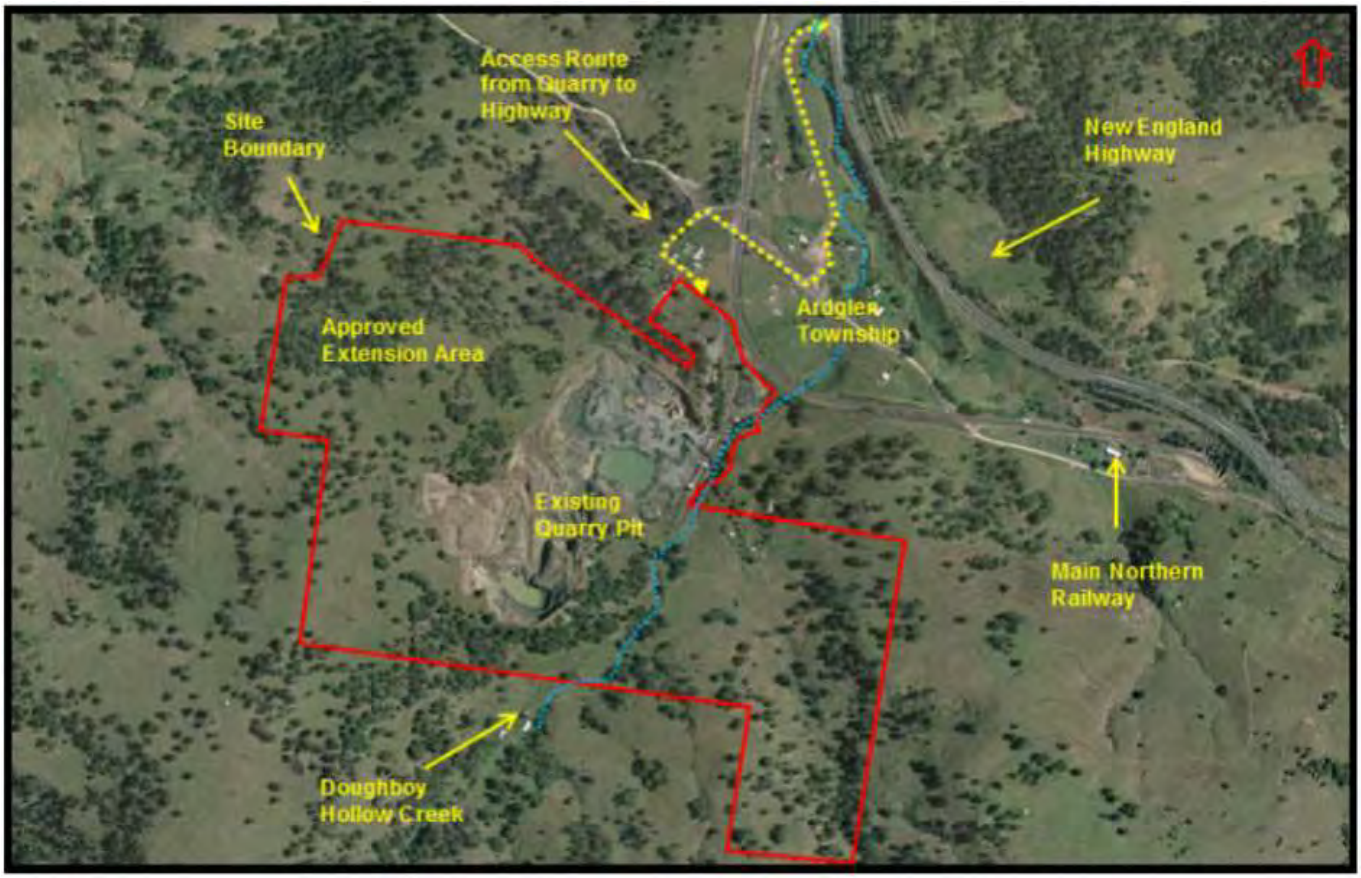


Figure 1- Ardglen Quarry - General Layout

we'll keep the local community and relevant stakeholders informed of the proposed operations and expected timeframes.

During 2022, we completed an Independent Environmental Audit (IEA) of the site and this was accepted by the Department of Planning and Environment (DPE) in late 2022. The full details of the 2022 IEA can be found on the Ardglen section of the Daracon website listed at the bottom of this newsletter.

Additionally, during 2022 we continued to maintain the rehabilitation tree planting on site with almost 1000 plants and shrubs installed over the last three years. Despite the severe weather conditions of drought, flooding rains and feral animal impact that's occurred, we've achieved a good survival rate to date. We also continue to monitor and maintain the planted areas regularly to ensure suitable progress of all rehabilitated areas.

Upcoming Blasting

Due to the fact the quarry has primarily been in 'care and maintenance' for many years, we've not undertaken any blasting activities on site for more than a decade, however blasting activities are likely to occur in the near future once quarrying recommences. We're therefore now asking all local residents if they'd like to be included in any future **blast notifications**? If you'd therefore like to be included in any future blast notifications for Ardglen quarry, please provide your details via the **'Contact Us'** section contained in Daracon website link shown below.

General enquiries regarding Ardglen Quarry, including blasting can also be made by contacting us on Daracon Quarries contact numbers listed below.

Community Consultative Committee

We continue to consult with the community via the Ardglen quarry Community Consultative Committee (CCC), which is assisted by an independent facilitator and comprises representatives from Crown Lands, Council and five local community representatives. The CCC meet at least twice per year, with meeting notes drafted, agreed and posted on the Daracon website listed below.

If you would like more information regarding Ardglen quarry, please contact Geoff Reeves or the CCC independent facilitator, Michael Silver on the numbers listed below.

Contact information

Daracon website address – **https://daracon.com.au/services/quarries**

Daracon quarries general contact number - **1300 663 151**

Daracon quarries Quarry Manager – **Geoff Reeves on 0429 813 442**

Ardglen quarry CCC independent facilitator – **Michael Silver on 0427 723 747**

Ardglen quarry CCC email address - **ardglenquarryccc@gmail.com**

History of The Site

Ardglen quarry has been operating as a hard rock quarry for over 100 years with Buttai Gravel (a Division of Daracon Group) purchasing the quarry from the State Rail Authority in 2005. Following the purchase of the quarry, Buttai Gravel operated the quarry continuously until 2012 when it temporarily closed and was placed into 'care and maintenance'. Whilst the quarry was in 'care and maintenance' we continued to undertake all environmental monitoring and regular inspections to ensure the site was safe and maintained appropriately.

A modification to the Ardglen quarry consent was submitted to the NSW Department of Planning and Environment (DPE) in 2018 which, following substantial consultation with the relevant stakeholders, was approved by the DPE in March 2021.

Appendix 9 Summary of truck movements and loads

Date and start time of relevant period (note '7:00 hourly' indicates the period between 7am and 8am etc)	Number of laden trucks for the relevant 1 hour time period
27/07/23 7 :00 hourly	1
27/07/23 9 :00 hourly	1
27/07/23 11 :00 hourly	1
27/07/23 14 :00 hourly	1
07/08/23 7 :00 hourly	2
07/08/23 10 :00 hourly	1
07/08/23 11 :00 hourly	1
07/08/23 14 :00 hourly	2
08/08/23 7 :00 hourly	2
08/08/23 11 :00 hourly	2
09/08/23 8 :00 hourly	1
09/08/23 9 :00 hourly	1
09/08/23 12 :00 hourly	2
09/08/23 15 :00 hourly	2
10/08/23 9 :00 hourly	1
10/08/23 10 :00 hourly	1
10/08/23 13 :00 hourly	2
10/08/23 16 :00 hourly	2
11/08/23 8 :00 hourly	2
11/08/23 12 :00 hourly	2
14/08/23 6 :00 hourly	1
14/08/23 7 :00 hourly	1
14/08/23 10 :00 hourly	2
14/08/23 14 :00 hourly	2
15/08/23 6 :00 hourly	2
15/08/23 10 :00 hourly	2
15/08/23 14 :00 hourly	2
16/08/23 6 :00 hourly	2
16/08/23 10 :00 hourly	2
17/08/23 6 :00 hourly	2
17/08/23 10 :00 hourly	2
17/08/23 11 :00 hourly	2
17/08/23 12 :00 hourly	1
17/08/23 13 :00 hourly	2
18/08/23 7 :00 hourly	4
18/08/23 10 :00 hourly	1
21/08/23 6 :00 hourly	2
21/08/23 7 :00 hourly	2
21/08/23 9 :00 hourly	1
21/08/23 10 :00 hourly	1

21/08/23 13 :00 hourly	2
21/08/23 14 :00 hourly	1
22/08/23 6 :00 hourly	2
22/08/23 10 :00 hourly	2
22/08/23 13 :00 hourly	2
23/08/23 7 :00 hourly	2
23/08/23 11 :00 hourly	1
23/08/23 12 :00 hourly	1
24/08/23 6 :00 hourly	2
24/08/23 7 :00 hourly	3
24/08/23 10 :00 hourly	3
24/08/23 11 :00 hourly	1
25/08/23 8 :00 hourly	1
28/08/23 6 :00 hourly	2
28/08/23 10 :00 hourly	2
28/08/23 13 :00 hourly	2
29/08/23 6 :00 hourly	1
29/08/23 7 :00 hourly	1
29/08/23 10 :00 hourly	2
30/08/23 7 :00 hourly	6
30/08/23 11 :00 hourly	1
31/08/23 6 :00 hourly	2
31/08/23 7 :00 hourly	3
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31/08/23 14 :00 hourly	2
01/09/23 7 :00 hourly	1
01/09/23 8 :00 hourly	4
01/09/23 11 :00 hourly	3
01/09/23 12 :00 hourly	2
01/09/23 14 :00 hourly	2
01/09/23 16 :00 hourly	3
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18/09/23 10 :00 hourly	2
18/09/23 13 :00 hourly	2
19/09/23 6 :00 hourly	2
19/09/23 10 :00 hourly	2
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20/09/23 10 :00 hourly	1
21/09/23 8 :00 hourly	1
22/09/23 6 :00 hourly	2
22/09/23 10 :00 hourly	2
22/09/23 13 :00 hourly	1
22/09/23 14 :00 hourly	1

25/09/23 6 :00 hourly	2
25/09/23 7 :00 hourly	2
25/09/23 8 :00 hourly	2
25/09/23 10 :00 hourly	4
25/09/23 11 :00 hourly	2
25/09/23 13 :00 hourly	2
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24/10/23 8 :00 hourly	1
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30/10/23 8 :00 hourly	2
30/10/23 10 :00 hourly	3

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30/10/23 13 :00 hourly	1
31/10/23 7 :00 hourly	2
01/11/23 6 :00 hourly	2
01/11/23 7 :00 hourly	2
01/11/23 8 :00 hourly	3
01/11/23 9 :00 hourly	4
01/11/23 10 :00 hourly	1
01/11/23 11 :00 hourly	2
01/11/23 12 :00 hourly	1
01/11/23 13 :00 hourly	1
01/11/23 14 :00 hourly	3
01/11/23 16 :00 hourly	2
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09/11/23 8 :00 hourly	4
09/11/23 9 :00 hourly	3
09/11/23 10 :00 hourly	4
09/11/23 11 :00 hourly	4
09/11/23 12 :00 hourly	5
09/11/23 13 :00 hourly	1
09/11/23 14 :00 hourly	4
09/11/23 13 :00 hourly	3
09/11/23 14 :00 hourly	1

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10/11/23 8 :00 hourly	11
10/11/23 9 :00 hourly	6
10/11/23 10 :00 hourly	7
10/11/23 11 :00 hourly	3
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10/11/23 14 :00 hourly	2
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13/11/23 7 :00 hourly	3
13/11/23 8 :00 hourly	4
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15/11/23 12 :00 hourly	2
15/11/23 14 :00 hourly	2
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22/11/23 12 :00 hourly	4
22/11/23 13 :00 hourly	2
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27/11/23 7 :00 hourly	2
27/11/23 8 :00 hourly	3

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27/11/23 10 :00 hourly	3
27/11/23 11 :00 hourly	3
27/11/23 12 :00 hourly	4
27/11/23 13 :00 hourly	4
27/11/23 14 :00 hourly	6
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01/12/23 9 :00 hourly	2
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04/12/23 6 :00 hourly	1

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04/12/23 10 :00 hourly	5
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05/12/23 12 :00 hourly	4
05/12/23 14 :00 hourly	4
05/12/23 15 :00 hourly	4
06/12/23 6 :00 hourly	1
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12/12/23 13 :00 hourly	1
12/12/23 14 :00 hourly	3
12/11/23 14 :00 hourly	1
12/12/23 15 :00 hourly	1
12/12/23 16 :00 hourly	2

13/12/23 6 :00 hourly	2
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13/12/23 8 :00 hourly	1
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13/12/23 12 :00 hourly	2
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13/12/23 14 :00 hourly	3
13/12/23 15 :00 hourly	1
13/12/23 16 :00 hourly	2
14/12/23 6 :00 hourly	2
14/12/23 7 :00 hourly	2
14/12/23 8 :00 hourly	3
14/12/23 10 :00 hourly	3
14/12/23 11 :00 hourly	2
14/12/23 12 :00 hourly	1
14/12/23 13 :00 hourly	1
14/12/23 14 :00 hourly	1
15/12/23 7 :00 hourly	1
18/12/23 8 :00 hourly	1
18/12/23 9 :00 hourly	1

Ticket Date	Ticket Time	Vehicle ID	Qty per load	Total daily laden trucks
27/07/2023	7:25	XO60JI	36	4
27/07/2023	9:18	XO60JI	36	
27/07/2023	11:51	XO60JI	36	
27/07/2023	14:35	XO60JI	35.9	
7/08/2023	7:15	XO60JI	35.9	6
7/08/2023	7:29	CP68KY	31.85	
7/08/2023	10:55	XO60JI	35.8	
7/08/2023	11:05	CP68KY	31.9	
7/08/2023	14:26	CP68KY	32.2	
7/08/2023	14:32	XO60JI	35.8	
8/08/2023	7:16	CP68KY	31.85	4
8/08/2023	7:22	XO60JI	36.1	
8/08/2023	11:05	CP68KY	31.8	
8/08/2023	11:10	XO60JI	36	
9/08/2023	8:55	CP68KY	31.85	6
9/08/2023	9:00	XO60JI	36	
9/08/2023	12:32	CP68KY	31.95	
9/08/2023	12:40	XO60JI	35.95	
9/08/2023	15:51	CP68KY	31.8	
9/08/2023	15:55	XO60JI	35.9	
10/08/2023	9:56	CP68KY	31.5	6
10/08/2023	10:01	XO60JI	35.75	
10/08/2023	13:09	CP68KY	31.9	
10/08/2023	13:15	XO60JI	35.95	
10/08/2023	16:21	CP68KY	32	
10/08/2023	16:23	XO60JI	35.8	
11/08/2023	8:30	XO60JI	36	4
11/08/2023	8:33	CP68KY	32.05	
11/08/2023	12:10	CP68KY	32.05	
11/08/2023	12:20	XO60JI	35.9	
14/08/2023	6:55	CP68KY	31.85	6
14/08/2023	7:00	XO60JI	35.8	
14/08/2023	10:28	CP68KY	31.8	
14/08/2023	10:32	XO60JI	36	
14/08/2023	14:00	XO60JI	35.9	
14/08/2023	14:03	CP68KY	31.8	
15/08/2023	6:50	CP68KY	32.05	6
15/08/2023	6:56	XO60JI	35.85	
15/08/2023	10:19	CP68KY	32.05	
15/08/2023	10:24	XO60JI	35.8	
15/08/2023	14:02	CP68KY	32.1	
15/08/2023	14:06	XO60JI	36.2	
16/08/2023	6:43	CP68KY	32.05	

16/08/2023	6:48	XO60JI	35.8	4
16/08/2023	10:19	CP68KY	32	
16/08/2023	10:27	XO60JI	36.1	
17/08/2023	6:51	CP68KY	32	9
17/08/2023	6:57	XO60JI	35.7	
17/08/2023	10:07	CP68KY	32.15	
17/08/2023	10:12	XO60JI	35.9	
17/08/2023	11:36	XO94KZ	34.45	
17/08/2023	11:54	ZAN750	30.5	
17/08/2023	12:07	XO95KZ	34.4	
17/08/2023	13:48	CP68KY	32.2	
17/08/2023	13:53	XO60JI	35.9	
18/08/2023	7:15	XO95KZ	34.6	5
18/08/2023	7:20	XO94KZ	34.45	
18/08/2023	7:31	XO95KZ	30.5	
18/08/2023	7:35	XO60JI	36.05	
18/08/2023	10:52	CP68KY	32.1	
21/08/2023	6:43	XO94KZ	34.45	9
21/08/2023	6:48	ZAN750	30.5	
21/08/2023	7:02	CP68KY	32	
21/08/2023	7:08	XO60JI	36.1	
21/08/2023	9:54	XO94KZ	34.4	
21/08/2023	10:06	ZAN750	30.65	
21/08/2023	13:45	XO94KZ	34.55	
21/08/2023	13:52	CP68KY	31.95	
21/08/2023	14:08	XO60JI	36.1	
22/08/2023	6:49	XO60JI	35.9	6
22/08/2023	6:54	CP68KY	31.9	
22/08/2023	10:06	XO60JI	36	
22/08/2023	10:10	CP68KY	32.15	
22/08/2023	13:45	XO60JI	36.1	
22/08/2023	13:53	CP68KY	31.85	
23/08/2023	7:01	XO60JI	36	4
23/08/2023	7:06	CP68KY	32.05	
23/08/2023	11:52	XO60JI	36.1	
23/08/2023	12:06	CP68KY	32.1	
24/08/2023	6:48	XO94KZ	34.65	9
24/08/2023	6:57	ZAN750	30.5	
24/08/2023	7:04	CP68KY	32.05	
24/08/2023	7:08	XO60JI	36.1	
24/08/2023	7:13	XO95KZ	34.6	
24/08/2023	10:26	XO94KZ	34.7	
24/08/2023	10:34	ZAN750	30.5	
24/08/2023	10:48	CP68KY	32.1	
24/08/2023	11:12	XO60JI	35.9	

25/08/2023	8:23	CB61FA	6	1
28/08/2023	6:41	XO54UI	31.8	6
28/08/2023	6:48	XO60JI	36.1	
28/08/2023	10:05	XO54UI	31.95	
28/08/2023	10:11	XO60JI	36.05	
28/08/2023	13:40	XO60JI	36.2	
28/08/2023	13:44	XO54UI	32.2	
29/08/2023	6:55	XO54UI	31.9	4
29/08/2023	7:04	XO60JI	36.15	
29/08/2023	10:41	XO60JI	36.05	
29/08/2023	10:44	XO54UI	31.95	
30/08/2023	7:13	XO95KZ	34.7	7
30/08/2023	7:19	XO54UI	31.9	
30/08/2023	7:26	XO60JI	35.95	
30/08/2023	7:31	ZAN750	32.3	
30/08/2023	7:36	XO94KZ	34.45	
30/08/2023	7:40	XO60JI	35.9	
30/08/2023	11:02	XO54UI	31.9	
31/08/2023	6:44	XO60JI	35.9	12
31/08/2023	6:50	XO54UI	32	
31/08/2023	7:01	XO94KZ	34.75	
31/08/2023	7:07	ZAN750	32.5	
31/08/2023	7:11	XO95KZ	34.65	
31/08/2023	10:25	XO60JI	36	
31/08/2023	10:32	XO54UI	32.1	
31/08/2023	10:40	XO94KZ	34.7	
31/08/2023	10:47	ZAN750	32.55	
31/08/2023	10:51	XO95KZ	34.45	
31/08/2023	14:02	XO60JI	36.2	
31/08/2023	14:09	XO54UI	32.2	
1/09/2023	7:45	XO94KZ	34.65	15
1/09/2023	8:01	ZAN750	32.7	
1/09/2023	8:20	XO95KZ	34.8	
1/09/2023	8:35	XO60JI	36.15	
1/09/2023	8:40	XO54UI	31.9	
1/09/2023	11:20	XO94KZ	34.55	
1/09/2023	11:41	ZAN750	32.55	
1/09/2023	11:55	XO95KZ	34.64	
1/09/2023	12:10	XO54UI	31.9	
1/09/2023	12:30	XO60JI	35.85	
1/09/2023	14:10	XO54UI	32	
1/09/2023	14:08	XO60JI	35.85	
1/09/2023	16:35	XO60JI	36.05	
1/09/2023	16:41	XO99MO	38	
1/09/2023	16:50	XO55QE	38	

14/09/2023	8:55	XO55QE	38	1
18/09/2023	6:41	XO54UI	31.9	6
18/09/2023	6:47	XO60JI	36	
18/09/2023	10:02	XO54UI	32.1	
18/09/2023	10:06	XO60JI	36	
18/09/2023	13:45	XO54UI	32.2	
18/09/2023	13:49	XO60JI	35.95	
19/09/2023	6:51	XO54UI	31.9	4
19/09/2023	6:58	XO60JI	36	
19/09/2023	10:05	XO54UI	32.6	
19/09/2023	10:10	XO60JI	36.05	
20/09/2023	6:48	XO54UI	32.05	4
20/09/2023	6:52	XO60JI	36.05	
20/09/2023	9:55	XO54UI	32.15	
20/09/2023	10:00	XO60JI	36	
21/09/2023	8:35	XO60JI	35.95	1
22/09/2023	6:46	XO54UI	32.05	6
22/09/2023	6:53	XO60JI	35.95	
22/09/2023	10:10	XO54UI	31.9	
22/09/2023	10:15	XO60JI	36.05	
22/09/2023	13:50	XO54UI	32.05	
22/09/2023	14:02	XO60JI	36.1	
25/09/2023	6:49	XO99MO	38	14
25/09/2023	6:55	XO71WJ	38	
25/09/2023	7:01	XO54UI	32.05	
25/09/2023	7:07	XO60JI	35.9	
25/09/2023	8:35	XO71WJ	38	
25/09/2023	8:41	XO99MO	38	
25/09/2023	10:10	XO71WJ	38	
25/09/2023	10:15	XO99MO	38	
25/09/2023	10:20	XO54UI	32	
25/09/2023	10:26	XO60JI	35.9	
25/09/2023	11:41	XO71WJ	38	
25/09/2023	11:46	XO99MO	38	
25/09/2023	13:50	XO54UI	32	
25/09/2023	13:54	XO60JI	36.1	
26/09/2023	6:56	XO54UI	32.2	4
26/09/2023	7:03	XO60JI	36.2	
26/09/2023	10:12	XO54UI	32.1	
26/09/2023	10:20	XO60JI	36.2	
27/09/2023	6:44	XO54UI	31.95	6
27/09/2023	6:51	XO60JI	36.1	
27/09/2023	7:02	XO54UI	32.2	
27/09/2023	7:06	XO60JI	36.05	
27/09/2023	10:33	XO54UI	32.1	

27/09/2023	10:40	XO60JI	35.9	
28/09/2023	6:43	XO54UI	32.2	9
28/09/2023	6:49	XO60JI	36.1	
28/09/2023	7:01	XO72WJ	38	
28/09/2023	10:12	XO54UI	31.95	
28/09/2023	10:22	XO60JI	35.9	
28/09/2023	10:44	XO72WJ	38	
28/09/2023	11:51	XO72WJ	38	
28/09/2023	13:45	XO54UI	32.2	
28/09/2023	13:49	XO60JI	36.05	
29/09/2023	6:55	XO54UI	32.05	4
29/09/2023	6:59	XO60JI	35.95	
29/09/2023	7:10	XO54UI	31.95	
29/09/2023	7:13	XO60JI	36.15	
3/10/2023	7:04	XO60JI	35.6	2
3/10/2023	7:09	XO60JI	36	
11/10/2023	6:55	XO54UI	32.05	3
11/10/2023	8:30	XO54UI	32.05	
11/10/2023	10:58	XO54UI	12.05	
18/10/2023	6:44	XN15OY	11.05	11
18/10/2023	7:40	XN15OY	11.1	
18/10/2023	8:35	XN15OY	10.9	
18/10/2023	9:55	XN15OY	11.1	
18/10/2023	10:49	XN15OY	11.15	
18/10/2023	11:41	XN15OY	11.05	
18/10/2023	13:09	XN15OY	11	
18/10/2023	14:00	XN15OY	10.95	
18/10/2023	14:52	XN15OY	10.9	
18/10/2023	15:33	XN15OY	10.95	
18/10/2023	16:20	XN15OY	11.05	
19/10/2023	7:10	XN15OY	11.1	7
19/10/2023	8:48	XN15OY	11.1	
19/10/2023	10:25	XN15OY	11.05	
19/10/2023	12:05	XN15OY	11.05	
19/10/2023	13:50	XN15OY	11	
19/10/2023	15:28	XN15OY	11.1	
19/10/2023	16:50	XN15OY	11.05	
20/10/2023	8:07	XO99MO	31.9	2
20/10/2023	8:10	XO55QE	32.15	
24/10/2023	8:20	XO55QE	38	1
30/10/2023	7:13	XO54UI	13	10
30/10/2023	7:20	XN51CC	12.4	
30/10/2023	8:40	XN51CC	12.45	
30/10/2023	8:48	XO55QE	13.05	
30/10/2023	10:16	XO55QE	13.05	

30/10/2023	10:20	XN51CC	12.5	10
30/10/2023	10:28	XO54UI	12.9	
30/10/2023	11:55	XN51CC	12.55	
30/10/2023	12:09	XO54UI	13.05	
30/10/2023	13:20	XN51CC	12.45	
31/10/2023	7:40	XO54UI	13	2
31/10/2023	7:48	XO72WJ	12.85	
1/11/2023	6:48	XN51CC	12.55	21
1/11/2023	6:54	XO54UI	13.05	
1/11/2023	7:01	XN15OY	10.95	
1/11/2023	7:06	XO54UI	13.05	
1/11/2023	8:01	XN51CC	12.45	
1/11/2023	8:05	XO72WJ	12.9	
1/11/2023	8:11	XO54UI	12.9	
1/11/2023	9:27	XN51CC	12.45	
1/11/2023	9:31	XO72WJ	12.95	
1/11/2023	9:38	XO54UI	13	
1/11/2023	9:43	XO72WJ	13.05	
1/11/2023	10:54	XN51CC	12.55	
1/11/2023	11:10	XO54UI	13.1	
1/11/2023	11:28	XO72WJ	12.95	
1/11/2023	12:50	XN51CC	12.6	
1/11/2023	13:04	XO54UI	13.1	
1/11/2023	14:11	XO72WJ	12.35	
1/11/2023	14:20	XN51CC	12.4	
1/11/2023	14:40	XO54UI	12.95	
1/11/2023	16:04	XO54UI	12.9	
1/11/2023	16:09	XN51CC	12.6	
2/11/2023	6:53	XO54UI	13	9
2/11/2023	7:00	XN51CC	12.55	
2/11/2023	7:06	AF44NH	2	
2/11/2023	8:32	XO54UI	13.1	
2/11/2023	8:40	XN51CC	12.45	
2/11/2023	10:17	XO54UI	12.9	
2/11/2023	10:29	XN51CC	12.5	
2/11/2023	12:36	XO54UI	13	
2/11/2023	12:44	XN51CC	12.6	
6/11/2023	7:10	XN51CC	12.4	9
6/11/2023	7:13	XO54UI	11.6	
6/11/2023	8:47	XO54UI	12.9	
6/11/2023	8:50	XN51CC	12.5	
6/11/2023	10:11	XO54UI	13.1	
6/11/2023	10:15	XN51CC	12.6	
6/11/2023	11:48	XO54UI	13.1	
6/11/2023	11:56	XO54UI	12	

6/11/2023	14:56	XO54UI	12	
8/11/2023	6:49	XO99MO	12	
8/11/2023	6:56	XO55QE	12.1	
8/11/2023	7:07	XO60JI	11.45	
8/11/2023	7:30	XN51CC	12.4	
8/11/2023	7:35	XO54UI	13.05	
8/11/2023	8:01	XO99MO	11.8	
8/11/2023	8:17	XO55QE	11.8	
8/11/2023	8:34	XO60JI	11.6	
8/11/2023	9:20	XN51CC	12.4	
8/11/2023	9:28	XO99MO	11.9	
8/11/2023	9:36	XO55QE	11.8	
8/11/2023	10:04	XO54UI	13.05	
8/11/2023	10:29	XO60JI	11.6	
8/11/2023	10:34	XO99MO	11.8	27
8/11/2023	10:41	XO55QE	12.05	
8/11/2023	10:48	XO60JI	11.6	
8/11/2023	11:00	XN51CC	12.6	
8/11/2023	12:30	XN51CC	12.4	
8/11/2023	12:38	XO99MO	11.95	
8/11/2023	12:45	XO55QE	11.95	
8/11/2023	12:53	XO60JI	11.5	
8/11/2023	13:33	XO54UI	13.05	
8/11/2023	14:15	XN51CC	12.45	
8/11/2023	14:21	XO99MO	12.05	
8/11/2023	14:28	XO55QE	12.1	
8/11/2023	14:33	XO60JI	11.45	
8/11/2023	15:50	XO54UI	13.05	
9/11/2023	6:46	XO99MO	12.9	
9/11/2023	6:53	XO55QE	11.95	
9/11/2023	7:01	XO60JI	11.6	
9/11/2023	7:12	XO54UI	13	
9/11/2023	7:20	XN51CC	12.6	
9/11/2023	7:50	XO99MO	12.05	
9/11/2023	7:55	XO55QE	12	
9/11/2023	8:04	XO60JI	11.65	
9/11/2023	8:15	XO54UI	12.9	
9/11/2023	8:23	XN51CC	12.55	
9/11/2023	8:55	XO99MO	12	
9/11/2023	9:01	XO55QE	11.95	
9/11/2023	9:12	XO60JI	11.65	
9/11/2023	9:25	XO54UI	13	
9/11/2023	10:20	XO99MO	12.1	
9/11/2023	10:23	XO55QE	12.35	
9/11/2023	10:28	XO60JI	11.6	

9/11/2023	10:33	XN51CC	12.5	
9/11/2023	11:25	XO99MO	12.45	37
9/11/2023	11:34	XO54UI	12.9	
9/11/2023	11:48	XO55QE	12.35	
9/11/2023	11:57	XO60JI	11.7	
9/11/2023	12:23	XN51CC	12.6	
9/11/2023	12:43	XO99MO	12.3	
9/11/2023	12:46	XO55QE	12.6	
9/11/2023	12:48	XO60JI	11.6	
9/11/2023	12:55	XO54UI	12.95	
9/11/2023	13:05	XN51CC	12.6	
9/11/2023	14:02	XO55QE	12.3	
9/11/2023	14:06	XO60JI	11.4	
9/11/2023	14:10	XO99MO	12.5	
9/11/2023	14:15	XO54UI	12.95	
9/11/2023	13:25	XO60JI	11.55	
9/11/2023	13:29	XO55QE	12.3	
9/11/2023	13:40	XO99MO	12.6	
9/11/2023	14:02	XN51CC	12.45	
9/11/2023	15:36	XO54UI	12.95	
10/11/2023	7:10	XN51CC	12.45	
10/11/2023	7:14	XO99MO	12.35	
10/11/2023	8:09	XO99MO	12.4	
10/11/2023	8:13	XO71WJ	12.2	
10/11/2023	8:17	XO55QE	12.3	
10/11/2023	8:22	XO60JI	12.05	
10/11/2023	8:27	XO72WJ	12.85	
10/11/2023	8:30	XO54UI	11.5	
10/11/2023	8:38	XO55QE	12.45	
10/11/2023	8:44	XO71WJ	12.3	
10/11/2023	8:48	XO60JI	11.4	
10/11/2023	8:51	XO54UI	11.4	
10/11/2023	8:57	XO72WJ	12.9	
10/11/2023	9:01	XN51CC	12.55	
10/11/2023	9:04	XO99MO	12.4	
10/11/2023	9:10	XO55QE	12.2	
10/11/2023	9:15	XO71WJ	12.3	
10/11/2023	9:22	XO60JI	11.45	
10/11/2023	9:40	XO54UI	11.4	
10/11/2023	10:08	XO99MO	12.25	40
10/11/2023	10:13	XO55QE	12.35	
10/11/2023	10:15	XO71WJ	12.2	
10/11/2023	10:24	XO72WJ	13.1	
10/11/2023	10:38	XO60JI	11.6	
10/11/2023	10:40	XO54UI	11.6	

10/11/2023	10:45	XN51CC	12.4	
10/11/2023	11:07	XO99MO	12.3	
10/11/2023	11:12	XO55QE	12.2	
10/11/2023	11:15	XO71WJ	12.3	
10/11/2023	12:15	XO60JI	11.4	
10/11/2023	12:20	XO54UI	11.4	
10/11/2023	12:30	XN51CC	12.45	
10/11/2023	13:15	XO99MO	11.85	
10/11/2023	13:20	XO55QE	12.2	
10/11/2023	13:21	XO71WJ	12.2	
10/11/2023	13:55	XO60JI	12.1	
10/11/2023	13:58	XO54UI	11.9	
10/11/2023	14:15	XO99MO	12.3	
10/11/2023	14:20	XO55QE	12.3	
10/11/2023	15:00	AF44NH	12	
13/11/2023	6:45	XO99MO	12.3	
13/11/2023	6:50	XO55QE	12.25	
13/11/2023	7:07	XN51CC	12.3	
13/11/2023	7:50	XO99MO	12.2	
13/11/2023	7:51	XO55QE	12.25	
13/11/2023	8:02	XN51CC	12.25	
13/11/2023	8:50	XO99MO	12.2	
13/11/2023	8:52	XO55QE	12.15	
13/11/2023	8:59	XN51CC	12	
13/11/2023	9:20	XO71WJ	13.05	
13/11/2023	12:08	XO99MO	37.8	21
18/11/2023	12:20	XO55QE	37.9	
13/11/2023	12:43	XO54UI	11.9	
13/11/2023	13:30	XO99MO	12.45	
18/11/2023	13:34	XO99MO	20.25	
13/11/2023	13:40	XO55QE	37.95	
18/11/2023	14:32	XO54UI	12.1	
13/11/2023	14:45	XO99MO	37.95	
13/11/2023	14:55	XO55QE	38	
13/11/2023	16:00	XO99MO	37.95	
13/11/2023	16:01	XO55QE	37.95	
14/11/2023	6:50	XO99MO	37.9	
14/11/2023	8:09	XO99MO	11.9	
14/11/2023	8:10	XO99MO	20	
14/11/2023	9:20	XO71WJ	10.2	
14/11/2023	9:52	XO99MO	11.9	
14/11/2023	10:25	XO71WJ	10.1	
14/11/2023	11:15	XO99MO	12.1	
14/11/2023	11:30	XO71WJ	12.15	16
14/11/2023	12:35	XO99MO	12.15	

14/11/2023	12:50	XO71WJ	12.2	
14/11/2023	13:50	XO99MO	10.9	
14/11/2023	13:55	XO71WJ	12.05	
14/11/2023	15:00	XO99MO	11.9	
14/11/2023	15:04	XO71WJ	12	
14/11/2023	16:10	XO99MO	12.55	
14/11/2023	16:12	XO71WJ	12.3	
15/11/2023	7:00	XO99MO	12	12
15/11/2023	7:02	XN51CC	12	
15/11/2023	8:05	XO99MO	12.05	
15/11/2023	8:07	XN51CC	12.05	
15/11/2023	9:25	XO99MO	12.2	
15/11/2023	9:30	XN51CC	12.15	
15/11/2023	11:00	XO99MO	11.9	
15/11/2023	11:15	XN51CC	12.2	
15/11/2023	12:10	XO99MO	11.95	
15/11/2023	12:30	XN51CC	12.15	
15/11/2023	14:00	XO99MO	12.25	
15/11/2023	14:08	XN51CC	12.15	
22/11/2023	11:15	XO55QE	37.05	4
22/11/2023	11:18	XN51CC	36.05	
22/11/2023	11:25	XO54UI	11.9	
22/11/2023	12:15	XO54UI	12.95	
22/11/2023	12:20	XO55QE	36.95	15
22/11/2023	12:35	XN51CC	35.85	
22/11/2023	12:40	XO54UI	13	
22/11/2023	13:50	XO54UI	12.9	
22/11/2023	13:52	XO55QE	37.85	
22/11/2023	14:00	XN51CC	37.9	
22/11/2023	14:06	XO54UI	12.85	
22/11/2023	14:25	XO55QE	37.85	
22/11/2023	14:45	XO54UI	12.9	
22/11/2023	14:51	XN51CC	12.4	
22/11/2023	14:53	XO99MO	13	
22/11/2023	14:55	XO72WJ	12.9	
22/11/2023	14:58	XO71WJ	13.05	
22/11/2023	15:41	XO99MO	12.9	
22/11/2023	15:55	XO72WJ	12.95	
27/11/2023	7:50	XN51CC	12.5	
27/11/2023	7:55	XO55QE	12.3	
27/11/2023	8:00	XO60JI	11.4	
27/11/2023	8:50	XN51CC	12.55	
27/11/2023	8:55	XO55QE	13	
27/11/2023	9:00	XO60JI	12.7	
27/11/2023	9:40	XN51CC	12.4	

27/11/2023	9:50	XO55QE	12.85	
27/11/2023	9:55	XO60JI	12.4	
27/11/2023	10:20	XN51CC	12.45	
27/11/2023	10:35	XO55QE	13	
27/11/2023	10:39	XO60JI	12.85	
27/11/2023	11:10	XN51CC	12.55	
27/11/2023	11:20	XO55QE	12.65	
27/11/2023	11:25	XO60JI	12.95	
27/11/2023	12:10	XN51CC	12.4	
27/11/2023	12:15	XO55QE	12.85	33
27/11/2023	12:20	XO60JI	12.9	
27/11/2023	12:21	XN27CS	12.05	
27/11/2023	13:05	XO55QE	13.05	
27/11/2023	13:10	XO60JI	12.95	
27/11/2023	13:15	XN51CC	12.4	
27/11/2023	13:50	XO55QE	12.8	
27/11/2023	14:00	XO60JI	12.7	
27/11/2023	14:02	XN51CC	12.55	
27/11/2023	14:30	XN27CS	12	
27/11/2023	14:40	XO55QE	12.4	
27/11/2023	14:45	XO60JI	12.6	
27/11/2023	14:46	XN51CC	12.35	
27/11/2023	15:45	XN51CC	38	
27/11/2023	16:00	XO55QE	37.8	
27/11/2023	16:05	XO60JI	35.85	
27/11/2023	16:13	XN27CS	12.05	
28/11/2023	6:46	XO72WJ	12.9	
28/11/2023	6:54	XO71WJ	13	
28/11/2023	7:10	XN51CC	12.5	
28/11/2023	7:35	XO72WJ	12.85	
28/11/2023	7:51	XO71WJ	13	
28/11/2023	8:00	XN51CC	12.45	
28/11/2023	8:21	XO71WJ	12.9	
28/11/2023	8:30	XO72WJ	12.9	
28/11/2023	8:45	XN51CC	12.4	
28/11/2023	9:10	XO72WJ	12.85	
28/11/2023	9:11	XO71WJ	12.95	
28/11/2023	9:20	XO55QE	12.5	
28/11/2023	9:22	XO60JI	12.5	
28/11/2023	9:31	XN51CC	12.5	
28/11/2023	9:55	XO72WJ	12.85	
28/11/2023	10:00	XO71WJ	12.8	
28/11/2023	10:15	XO55QE	12.8	
28/11/2023	10:18	XO60JI	12.8	
28/11/2023	10:19	XN51CC	12.65	

28/11/2023	10:45	XO71WJ	13	
28/11/2023	10:50	XO72WJ	12.95	
28/11/2023	11:00	XO55QE	12.85	
28/11/2023	11:02	XO60JI	12.7	46
28/11/2023	11:05	XN51CC	12.75	
28/11/2023	11:30	XO71WJ	12.8	
28/11/2023	11:35	XO72WJ	13	
28/11/2023	11:50	XO55QE	13	
28/11/2023	11:55	XO60JI	12.7	
28/11/2023	11:56	XN51CC	12.55	
28/11/2023	12:15	XO71WJ	12.9	
28/11/2023	12:20	XO72WJ	13.05	
28/11/2023	12:35	XO60JI	12.85	
28/11/2023	12:40	XO55QE	13.05	
28/11/2023	12:45	XN51CC	12.3	
28/11/2023	13:10	XO71WJ	12.6	
28/11/2023	13:15	XO72WJ	12.65	
28/11/2023	13:50	XN51CC	12.3	
28/11/2023	13:55	XO60JI	12.95	
28/11/2023	14:00	XO55QE	12.8	
28/11/2023	14:01	XO71WJ	13	
28/11/2023	14:10	XO72WJ	12.95	
28/11/2023	15:00	XN51CC	12.7	
28/11/2023	15:05	XO71WJ	12.95	
28/11/2023	15:29	XO72WJ	12.85	
28/11/2023	15:30	XO60JI	35.85	
28/11/2023	15:40	XO55QE	37.85	
29/11/2023	6:45	XO72WJ	12.9	
29/11/2023	6:46	XO71WJ	13	
29/11/2023	7:01	XN51CC	12.4	
29/11/2023	7:35	XO72WJ	13	
29/11/2023	7:36	XO71WJ	12.85	
29/11/2023	7:40	XN51CC	12.45	
29/11/2023	8:20	XO72WJ	12.95	
29/11/2023	8:25	XO71WJ	13	
29/11/2023	8:45	XN51CC	12.5	
29/11/2023	9:10	XO55QE	12.8	
29/11/2023	9:14	XO60JI	12.75	
29/11/2023	9:15	XO72WJ	12.6	
29/11/2023	9:16	XO71WJ	12.85	
29/11/2023	9:20	XN51CC	12.55	
29/11/2023	10:00	XO55QE	13	
29/11/2023	10:05	XO60JI	12.5	
29/11/2023	10:10	XO72WJ	12.8	
29/11/2023	10:11	XO71WJ	12.75	

29/11/2023	10:20	XN51CC	12.65	
29/11/2023	10:50	XO55QE	12.45	
29/11/2023	10:55	XO60JI	12.55	
29/11/2023	10:58	XO72WJ	13.05	
29/11/2023	11:00	XO71WJ	12.85	46
29/11/2023	11:05	XN51CC	12.55	
29/11/2023	11:40	XO55QE	12.95	
29/11/2023	11:45	XO60JI	12.65	
29/11/2023	11:48	XO72WJ	12.8	
29/11/2023	11:49	XO71WJ	13	
29/11/2023	11:55	XN51CC	12.5	
29/11/2023	12:35	XO55QE	13	
29/11/2023	12:37	XO60JI	12.55	
29/11/2023	12:38	XO72WJ	12.8	
29/11/2023	12:46	XO71WJ	12.7	
29/11/2023	12:48	XN51CC	12.45	
29/11/2023	13:25	XO60JI	12.55	
29/11/2023	13:30	XO55QE	12.7	
29/11/2023	13:31	XO71WJ	12.9	
29/11/2023	13:32	XO72WJ	12.95	
29/11/2023	13:35	XN51CC	12.45	
29/11/2023	14:05	XO60JI	12.5	
29/11/2023	14:20	XN51CC	12.5	
29/11/2023	14:25	XO55QE	13.05	
29/11/2023	14:27	XO72WJ	12.8	
29/11/2023	14:35	XO71WJ	13.1	
29/11/2023	15:30	XO60JI	36.05	
29/11/2023	15:31	XO55QE	37.9	
30/11/2023	6:45	XO71WJ	12.8	
30/11/2023	6:48	XO72WJ	12.85	
30/11/2023	7:30	XN51CC	12.5	
30/11/2023	7:31	XO71WJ	12.9	
30/11/2023	7:35	XO72WJ	12.95	
30/11/2023	8:51	XN51CC	12.8	
30/11/2023	8:55	XO71WJ	12.7	
30/11/2023	9:20	XO72WJ	12.85	
30/11/2023	9:40	XN51CC	12.45	
30/11/2023	9:45	XO71WJ	12.9	
30/11/2023	9:50	XO72WJ	12.95	
30/11/2023	9:52	XO60JI	12.5	
30/11/2023	9:55	XO55QE	12.8	
30/11/2023	10:30	XN51CC	12.4	
30/11/2023	10:35	XO71WJ	13	
30/11/2023	10:40	XO72WJ	13	
30/11/2023	10:45	XO60JI	12.95	

30/11/2023	10:50	XO55QE	12.8	
30/11/2023	11:20	XN51CC	12.7	
30/11/2023	11:30	XO71WJ	12.7	
30/11/2023	11:33	XO72WJ	12.95	
30/11/2023	11:35	XO60JI	12.95	43
30/11/2023	11:40	XO55QE	12.95	
30/11/2023	12:10	XN51CC	12.8	
30/11/2023	12:24	XO60JI	12.7	
30/11/2023	12:30	XO55QE	12.7	
30/11/2023	12:31	XO71WJ	12.75	
30/11/2023	12:35	XO72WJ	13.05	
30/11/2023	13:00	XN51CC	12.6	
30/11/2023	13:10	XO60JI	12.85	
30/11/2023	13:20	XO55QE	12.9	
30/11/2023	13:21	XO71WJ	13	
30/11/2023	13:25	XO72WJ	12.8	
30/11/2023	14:00	XN51CC	12.75	
30/11/2023	14:05	XO60JI	12.9	
30/11/2023	14:15	XO55QE	12.9	
30/11/2023	14:16	XO71WJ	12.7	
30/11/2023	14:20	XO72WJ	12.7	
30/11/2023	14:55	XN51CC	12.6	
30/11/2023	15:00	XO60JI	12.8	
30/11/2023	15:15	XO55QE	12.75	
30/11/2023	15:16	XO71WJ	13	
30/11/2023	15:17	XO72WJ	12.8	
1/12/2023	6:45	XO72WJ	12.9	
1/12/2023	6:58	XO99MO	13	
1/12/2023	7:40	XO72WJ	12.7	
1/12/2023	7:51	XO99MO	12.85	
1/12/2023	8:30	XO72WJ	12.7	10
1/12/2023	8:42	XO99MO	12.8	
1/12/2023	9:25	XO72WJ	12.75	
1/12/2023	9:34	XO99MO	12.9	
1/12/2023	10:15	XO72WJ	12.9	
1/12/2023	11:05	XO72WJ	12.7	
4/12/2023	6:51	XO54UI	12	
4/12/2023	7:00	XO72WJ	13.05	
4/12/2023	7:01	XO55QE	13	
4/12/2023	7:02	XO71WJ	12.7	
4/12/2023	7:35	XN51CC	12.8	
4/12/2023	7:50	XO72WJ	12.9	
4/12/2023	7:55	XO71WJ	12.95	
4/12/2023	7:56	XO55QE	12.8	
4/12/2023	8:00	XO54UI	12.7	

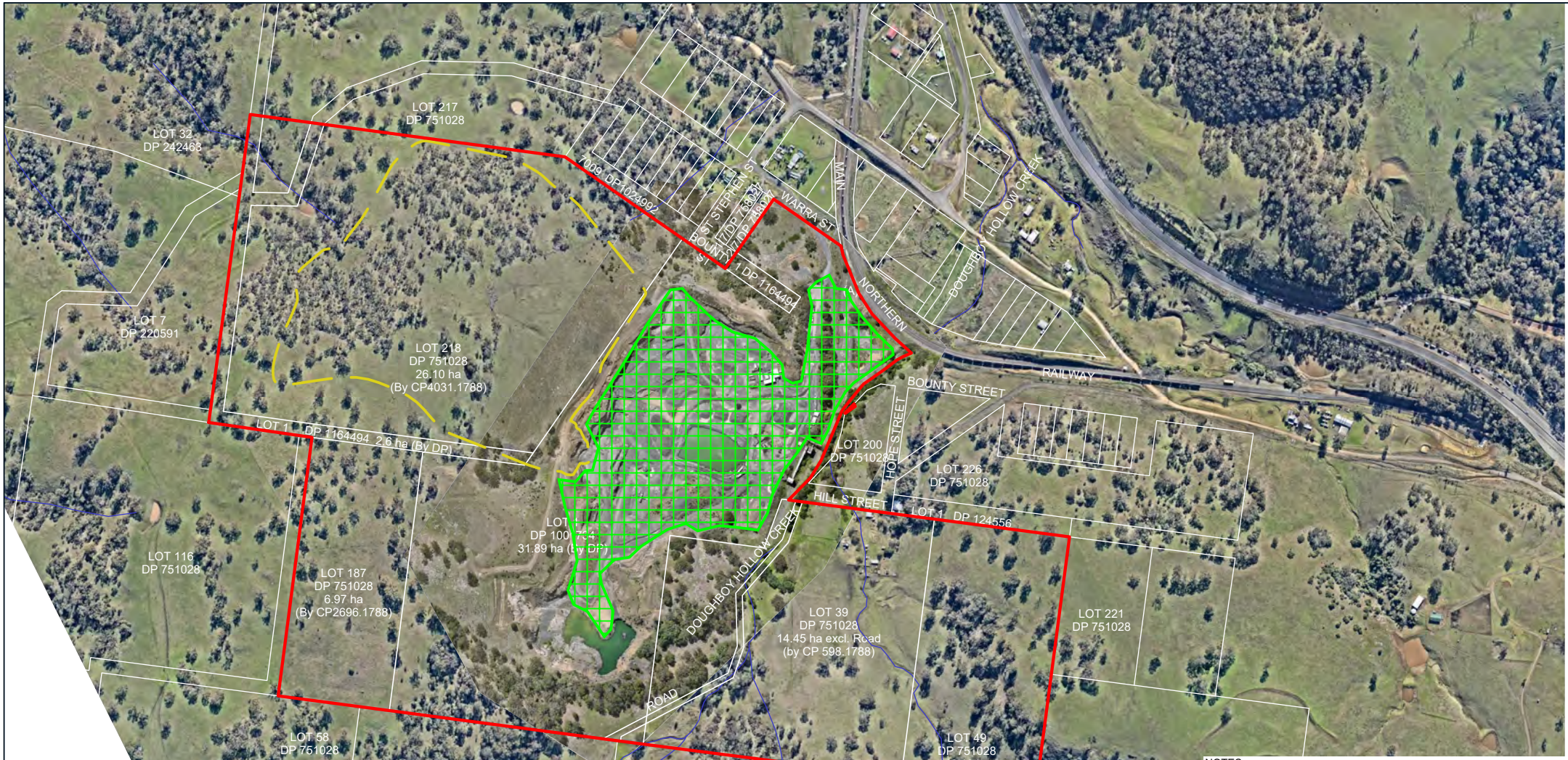
4/12/2023	8:30	XN51CC	12.5	
4/12/2023	8:58	XO72WJ	12.95	
4/12/2023	9:01	XO55QE	12.8	
4/12/2023	9:02	XO71WJ	12.8	
4/12/2023	9:05	XO54UI	13.05	
4/12/2023	9:25	XN51CC	12.85	
4/12/2023	9:50	XO72WJ	12.8	
4/12/2023	9:55	XO55QE	13	
4/12/2023	10:00	XO71WJ	13	
4/12/2023	10:06	XO54UI	12.9	
4/12/2023	10:15	XN51CC	12.9	
4/12/2023	10:46	XO72WJ	12.95	
4/12/2023	10:50	XO55QE	12.85	43
4/12/2023	11:07	XO71WJ	12.85	
4/12/2023	11:09	XO54UI	13.1	
4/12/2023	11:20	XN51CC	12.9	
4/12/2023	11:50	XO72WJ	12.7	
4/12/2023	11:51	XO55QE	13	
4/12/2023	12:01	XO71WJ	12.85	
4/12/2023	12:03	XO54UI	12.8	
4/12/2023	12:10	XN51CC	12.8	
4/12/2023	12:42	XO72WJ	12.9	
4/12/2023	12:44	XO55QE	12.9	
4/12/2023	12:51	XO71WJ	12.9	
4/12/2023	13:05	XN51CC	12.85	
4/12/2023	13:48	XO72WJ	12.9	
4/12/2023	13:50	XO55QE	12.8	
4/12/2023	13:56	XO71WJ	12.95	
4/12/2023	14:00	XN51CC	12.7	
4/12/2023	14:29	XO54UI	12.95	
4/12/2023	14:41	XO72WJ	12.9	
4/12/2023	14:43	XO55QE	12.8	
4/12/2023	14:49	XO71WJ	12.8	
4/12/2023	14:55	XN51CC	12.95	
5/12/2023	6:45	XO71WJ	13.05	
5/12/2023	6:53	XO72WJ	12.7	
5/12/2023	7:01	XO55QE	12.9	
5/12/2023	7:02	XN51CC	12.7	
5/12/2023	7:55	XO72WJ	12.9	
5/12/2023	7:56	XO55QE	12.85	
5/12/2023	7:57	XN51CC	12.7	
5/12/2023	8:00	XO71WJ	12.8	
5/12/2023	8:00	XO72WJ	12.85	
5/12/2023	8:50	XO55QE	12.95	
5/12/2023	8:52	XN51CC	12.7	

5/12/2023	8:58	XO71WJ	12.8	
5/12/2023	9:45	XO72WJ	12.8	
5/12/2023	9:48	XO55QE	12.9	
5/12/2023	9:49	XO71WJ	12.95	
5/12/2023	9:50	XN51CC	12.95	
5/12/2023	10:48	XO72WJ	13	
5/12/2023	10:52	XO55QE	12.9	36
5/12/2023	10:55	XO71WJ	12.85	
5/12/2023	11:48	XN51CC	12.8	
5/12/2023	11:50	XO72WJ	12.8	
5/12/2023	11:55	XO55QE	12.9	
5/12/2023	11:57	XO71WJ	13	
5/12/2023	11:58	XN51CC	12.8	
5/12/2023	12:52	XO72WJ	12.8	
5/12/2023	12:54	XO55QE	12.8	
5/12/2023	12:55	XO71WJ	13	
5/12/2023	12:56	XN51CC	12.95	
5/12/2023	14:00	XO72WJ	12.85	
5/12/2023	14:02	XO55QE	12.9	
5/12/2023	14:03	XO71WJ	13.05	
5/12/2023	14:05	XN51CC	12.8	
5/12/2023	15:00	XO72WJ	12.95	
5/12/2023	15:05	XO55QE	12.9	
5/12/2023	15:06	XO71WJ	12.95	
5/12/2023	15:07	XN51CC	13	
6/12/2023	6:52	XN51CC	37.9	1
7/12/2023	7:00	XO60JI	36.1	
7/12/2023	10:35	XN51CC	37.9	
7/12/2023	11:10	XO60JI	35.9	5
7/12/2023	13:20	XN51CC	37.95	
7/12/2023	13:28	XO60JI	36.05	
8/12/2023	7:00	XO71WJ	37.95	
8/12/2023	7:01	XN51CC	37.8	
8/12/2023	8:25	XO71WJ	37.8	
8/12/2023	8:40	XN51CC	37.85	
8/12/2023	9:44	CL88EY	24.9	
8/12/2023	9:48	XN97TA	24.95	
8/12/2023	10:00	XO71WJ	37.95	
8/12/2023	10:01	XN51CC	37.8	16
8/12/2023	12:00	XO71WJ	37.95	
8/12/2023	12:05	XN51CC	37.9	
8/12/2023	13:45	XO71WJ	37.9	
8/12/2023	13:55	XN51CC	37.85	
8/12/2023	14:00	XO72WJ	38	
8/12/2023	14:05	XO55QE	38	

8/12/2023	14:38	XO60JI	36.1	
8/12/2023	14:50	XO99MO	38	
11/12/2023	7:10	CL88EY	24.9	
11/12/2023	7:15	XN97TA	24.95	
11/12/2023	7:18	XO54UI	31.9	
11/12/2023	8:31	XO54UI	31.9	
11/12/2023	9:05	XO99MO	37.9	
11/12/2023	9:25	XO55QE	37.95	
11/12/2023	9:40	XO60JI	36.1	
11/12/2023	9:45	XO72WJ	37.8	16
11/12/2023	9:50	XN51CC	37.85	
11/12/2023	12:55	XO99MO	38	
11/12/2023	12:57	XO54UI	31.9	
11/12/2023	13:15	XO55QE	38	
11/12/2023	13:20	XO60JI	36.05	
11/12/2023	13:40	XO72WJ	37.75	
11/12/2023	13:55	XN51CC	37.95	
11/12/2023	15:25	XO71WJ	37.95	
12/12/2023	6:42	XO99MO	37.95	
12/12/2023	6:45	XO55QE	37.85	
12/12/2023	7:01	XO60JI	35.95	
12/12/2023	7:02	XO72WJ	37.95	
12/12/2023	9:00	XO99MO	38	
12/12/2023	9:15	XN51CC	37.85	
12/12/2023	10:30	XO55QE	37.95	
12/12/2023	10:35	XO60JI	35.9	
12/12/2023	10:43	XO72WJ	38	
12/12/2023	10:45	XO71WJ	38	19
12/12/2023	12:35	XO99MO	37.95	
12/12/2023	13:15	XN51CC	37.95	
12/12/2023	14:20	XO55QE	37.95	
12/12/2023	14:21	XO60JI	35.9	
12/12/2023	14:40	XO72WJ	38	
12/11/2023	14:45	CL88EY	24.95	
12/12/2023	15:00	XO71WJ	38	
12/12/2023	16:02	XO99MO	38	
12/12/2023	16:25	XO54UI	31.1	
13/12/2023	6:45	XO55QE	38	
13/12/2023	6:50	XO60JI	36.05	
13/12/2023	7:01	XO72WJ	37.9	
13/12/2023	7:40	XN51CC	37.9	
13/12/2023	7:55	XO99MO	37.85	
13/12/2023	8:35	XO71WJ	38	
13/12/2023	10:18	XO54UI	31.5	
13/12/2023	10:30	XO55QE	38	

13/12/2023	10:31	XO60JI	36.05	
13/12/2023	10:35	XO72WJ	37.95	
13/12/2023	11:20	CL88EY	25.05	21
13/12/2023	11:55	XN51CC	37.8	
13/12/2023	12:19	XO99MO	37.9	
13/12/2023	12:50	XO71WJ	37.95	
13/12/2023	13:50	XO54UI	31.1	
13/12/2023	14:15	XO55QE	38	
13/12/2023	14:20	XO60JI	36.1	
13/12/2023	14:25	XO72WJ	37.9	
13/12/2023	15:40	XN51CC	38	
13/12/2023	16:10	XO99MO	38	
13/12/2023	16:40	XO71WJ	37.95	
14/12/2023	6:45	XO55QE	38	
14/12/2023	6:51	XO54UI	31.55	
14/12/2023	7:01	XO60JI	36	
14/12/2023	7:15	XO72WJ	38	
14/12/2023	8:12	XO99MO	38	
14/12/2023	8:15	XN51CC	38	
14/12/2023	8:55	XO71WJ	38	
14/12/2023	10:30	XO55QE	38	15
14/12/2023	10:38	XO54UI	31.1	
14/12/2023	10:45	XO60JI	35.95	
14/12/2023	11:00	XO72WJ	37.95	
14/12/2023	11:10	XN15OY	11	
14/12/2023	12:08	XN15OY	11	
14/12/2023	13:14	XN15OY	10.9	
14/12/2023	14:02	XN97TA	25.1	
15/12/2023	7:49	XN97TA	24.9	1
18/12/2023	8:27	XN15OY	11	2
18/12/2023	9:45	XN15OY	11.1	
			16907.59	

Appendix 10 Figure showing the current operational footprint



NOTES:
1. THE BOUNDARIES SHOWN ARE APPROXIMATE ONLY. ANY DISTANCES OR AREA DIMENSIONS SHOWN HAVE BEEN COMPILED FROM REGISTERED PLANS. FURTHER SURVEY WILL BE REQUIRED TO ACURATELY DETERMINE BOUNDARY POSITIONS, DIMENSIONS AND AREAS.
2. IMAGERY SOURCES INCLUDE:
   - NEARMAPS (21/6/2015)- Accessed 21/8/19.
   - DARACON (05/03/2024)

- QUARRY BOUNDARY
- LOT BOUNDARY
- DEVELOPMENT CONSENT BOUNDARY
- (A) RIGHT OF CARRIAGE WAY 6m WIDE (DP1001734) PLANS USED (598-1788, 790-1788, DP1001734, 2696-1788, 4031-1788, 7349-1603, 2451-1788)
- DECEMBER 2023 'OPERATIONAL AREA'

REVISIONS AND APPROVALS

REV	DATE	DESCRIPTION	DRN	CHKD	APPRD
01	26/03/2024	ANNUAL REOPRT	MH	LR	JC

0 5 10 15 20 25 30 35 40 45 50mm ON A3 SIZE ORIGINAL

SCALE: H 1:6000 V 1:6000

SURVEY DATE:		PLOTTED BY:	
12d MODEL PROJECT:	Site Plan	COORD. SYSTEM:	MGA94 Zone 56
PLOT DATE:	26/03/2024	HEIGHT DATUM:	AHD
PLOT FILE:	BAR-AR-001_01	ORIGIN OF LEVELS:	

DARACON Group
DARACON GROUP
20 KULLARA CLOSE, BERESFIELD NSW
AUSTRALIA 2322
PH: 02 4974 9200 dgroup@daracon.com.au
FAX: 02 4951 1070 www.daracon.com.au
BERESFIELD | AUBURN | MOUNT THORLEY | GUNNEDAH

PROJECT: QUARRY DEVELOPMENT
ARDGLEN QUARRY
DARACON JOB No: BAR
CLIENT: BUTTAI GRAVEL PTY LTD
CLIENT JOB No:
DRAWING STATUS: FOR INFORMATION
SHEET: 1 of 1

DRAWING TITLE:
CURRENT QUARRY FOOTPRINT
NEARMAP IMAGE DATED: 21/06/2015
DRONE IMAGE DATED: 05/03/2024

A3 | BAR-AR-001 DRAWING NUMBER | 01 REV