

ANNUAL REVIEW

For the Period 1 July 2020 to 30 June 2021

FINAL

September 2021





ANNUAL REVIEW

For the Period 1 July 2020 to 30 June 2021

FINAL

Prepared by
Umwelt (Australia) Pty Limited
on behalf of
Walker Quarries Pty Ltd

Project Director: Alex Irwin
Project Manager: David McQueeney
Report No. 4433_R23
Date: September 2021



QMS Certification Services

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Document Status

Rev No.	Reviewer		Approved for Issue	
	Name	Date	Name	Date
Final	Alex Irwin	30 September 2021	Alex Irwin	30 September 2021

TITLE BLOCK

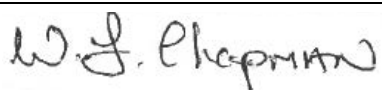
Wallerawang Quarry	
Name of operator	Walker Quarries Pty Ltd
Development consent/project approval #	DA 344-11-2001
Name of holder of development consent/project approval	Walker Quarries Pty Ltd
Mining Lease #	ML 1633
Name of holder of mining lease	Walker Quarries Pty Ltd
Water licence #	WAL42390
Name of holder of water licence	Walker Quarries Pty Ltd
MOP/RMP start date	20 July 2020
MOP/RMP end date	19 July 2025
Annual Review start date	1 July 2020
Annual Review end date	30 June 2021
<p>I, Wayne Chapman, certify that this audit report is a true and accurate record of the compliance status of the Wallerawang Quarry for the period 1 July 2020 to 30 June 2021 and that I am authorised to make this statement on behalf of Walker Quarries Pty Ltd.</p> <p><i>Note</i></p> <p><i>a. The Annual Review is an 'environmental audit' for the purposes of section 122B(2) of the Environmental Planning and Assessment Act 1979. Section 122E provides that a person must not include false or misleading information (or provide information for inclusion in) an audit report produced to the Minister in connection with an environmental audit if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, \$1 million and for an individual, \$250,000.</i></p> <p><i>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); Section 307A, 307B and 307C (false or misleading application/information/documents – maximum penalty 2 years imprisonment or \$22,000, or both).</i></p>	
Name of authorised reporting officer	Wayne Chapman
Title of authorised reporting officer	Mine Manager
Signature of authorised reporting officer	
Date	30/09/2021

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Appendix 2	Return for Extractive Materials – 2020/21
Appendix 3	Annual Exploration Progress Report (EL 4473): 13 January 2020 – 12 January 2021
Appendix 4	Noise Agreement
Appendix 5	Noise Monitoring Assessments – September 2019 & March 2020
Appendix 6	QAMS Dust Master Pro Information and Specification Sheet
Appendix 7	Biodiversity Conservation Fund Payment Confirmation
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Appendix 9	Aboriginal Cultural Heritage Management Documentation
Appendix 10	Minutes of Wallerawang Quarry Community Consultative Committee
Appendix 11	Independent Environmental Audit
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1.0 Statement of Compliance

The Statement of Compliance comprises **Table 1.1** and **Table 1.2** below and reflects the non-compliances that occurred as a result of activities during the reporting period, with reference to the compliance Status Key in **Table 1.3**.

Table 1.1 Statement of Compliance

Were all conditions of the relevant approval(s) complied with?	Yes/No
DA 344-11-2001	No
ML 1633	Yes
EPL 13172	No

Table 1.2 Non-Compliances

Condition	Condition Description (summary)	Compliance Status	Comment	Section
DA 344-11-2001 Schedule 2 Condition 2(a)	The development may only be carried out: <i>(a) in compliance with the conditions of this consent.</i>	ANC	Relating to the fact that non-conformances against some conditions requirements were noted.	All
DA 344-11-2001 Schedule 3 Condition 3B	The noise criteria does not apply if the Applicant has an agreement with the owner/s of the relevant residence or land to exceed the noise criteria, and the Applicant has advised the Department in writing of the terms of this agreement.	ANC	Walker Quarries (WQ) was not able to verify that DPIE have been advised that a noise agreement is in place with the owner of property 'N2'.	6.3
DA 344-11-2001 Schedule 3 Condition 23C(a)	The Applicant must prepare an Aboriginal Cultural Heritage Management Plan (ACHMP) for the development to the satisfaction of the Secretary. This plan must: <i>(a) be prepared by suitably qualified and experienced person/s whose appointment has been endorsed by the Secretary</i>	ANC	DPIE endorsement of OzArk as a suitable party to prepare the ACHMP could not be verified at the time of audit. It is noteworthy that the ACHMP was approved by DPIE.	6.7
DA 344-11-2001 Schedule 3 Condition 25	By 31 December 2018, unless otherwise agreed with the Secretary, the Applicant must make suitable arrangements to provide appropriate long-term security for the Biodiversity Offset Strategy, to the satisfaction of the Secretary. Any mechanism must remain in force in perpetuity.	ANC	Suitable long-term securities for Walker Quarries offsets were not confirmed and approved by DPIE prior to 31/12/18, as required under DA 344-11-2001.	6.6

Condition	Condition Description (summary)	Compliance Status	Comment	Section
DA 344-11-2001 Schedule 3 Condition 37	The Applicant must ensure that all tanks and similar storage facilities (other than for water) are protected by appropriate bunding or other containment, in accordance with the relevant Australian Standards.	Non-compliant Medium Risk	Waste oil drums and other containers were found to be stored outside of bunded pallets during the independent audit site inspection. All oil drums and oil containers are now stored within bunded pallets.	6.11
DA 344-11-2001 Schedule 5 Condition 5 (b) / (c)	Within 3 months of the submission of an: (b) incident report under condition 9; (c) audit report under condition 14 The Applicant must review the strategies, plans and programs required under this consent, the applicant must notify the Department in writing of any such review being undertaken. Where this review leads to revisions in any such document, then within 6 weeks of the review the revised document must be submitted for the approval of the Secretary.	ANC	Evidence was not available to verify WQ review of plans strategies and programs following submission of relevant Annual Review (AR) documents and the 2018 IEA report.	12.0
DA 344-11-2001 Schedule 5 Condition 17	Relating to the provision of Environmental Assessment documentation listed in Condition 2(2)(c), the environmental assessments for modifications 1 and 2 be available on Wallerawang Quarry website.	ANC	Environmental Assessment documentation listed in Schedule 2, Condition 2(c) of DA 344-11-2001 was not available on the Quarry's website. MOD 1 Environmental Assessments have been added to the website, and a link to the major projects website has been added to access MOD 2 Environmental Assessments.	10.3

Table 1.3 Compliance Status Key

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 consequence 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-compliant	ANC	Non-compliance which is administrative in nature, i.e. missing a deadline for reporting, failure to keep records, but which has no direct environmental consequences. Has minimal to low potential for environmental consequences.

This review follows an Independent Environmental Audit (IEA) completed on 16 July 2021 for the period 13 April 2018 to 27 April 2021 as required under Condition 5(13)¹ of DA 344-11-2001 (refer also to **Section 10.0**). **Table 1.1** and **Table 1.2** reflect the non-compliances during this reporting period only.

As the IEA was completed for the period 13 April 2018 to 27 April 2021 only, it is to be noted that the period 28 April 2021 to 30 June 2021 was subject to a separate review of data and management completed by Umwelt (Australia) Pty Limited and Walker Quarries Pty Ltd.

¹ Conditions are referenced in this report as follows Schedule(Condition), i.e. Condition 13 of Schedule 5 is presented as Condition 5(13).

2.0 Introduction

2.1 Scope and Format

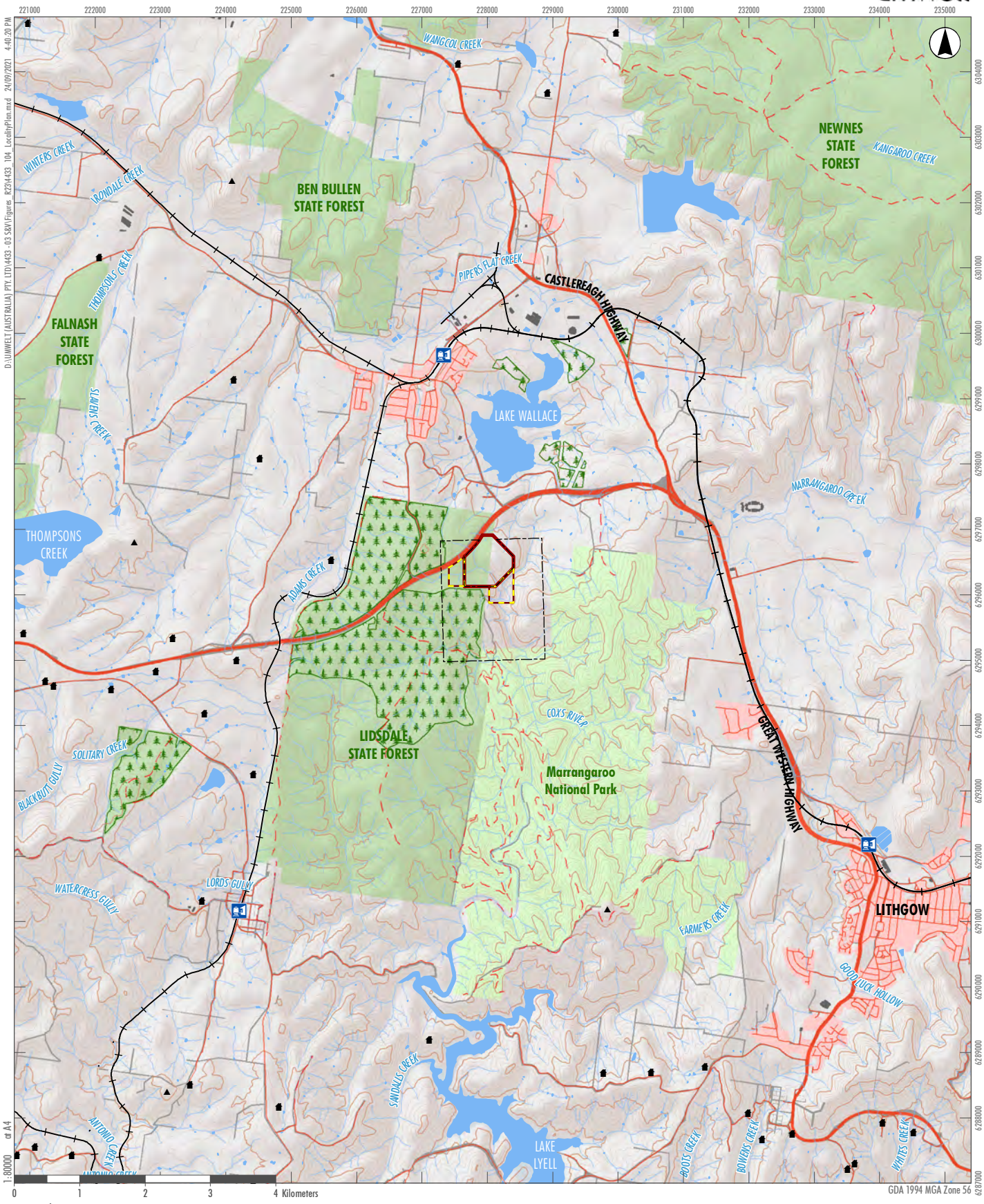
The Wallerawang Quarry (the Quarry) is operated by Walker Quarries Pty Ltd (Walker Quarries) in accordance with DA 344-11-2001. The Quarry is located approximately 8 km north-west of Lithgow NSW (**Figure 2.1**).

DA 344-11-2001 was granted by the Minister for Infrastructure and Planning on 19 October 2004, and was modified (MOD 1) on 25 August 2017 to regularise several constructed components of the Quarry and formalise the approval of production of a more extensive range of quarry products. On 7 December 2018, DA 344-11-2001 was modified (MOD 2) to extend the operation of the Quarry to 15 July 2020. On 26 February 2020, DA 344-11-2001 was modified again, to extend the extraction area and increase the area available for stockpiling to the south-west and south of the Western Stockpile Area. This modification (MOD 3) extends the operation of the Quarry to 15 July 2040.

This Annual Review has been prepared for the Quarry in accordance with the requirements of Condition 5(11) of Development Consent DA 344-11-2001 (DA 344-11-2001) (refer to **Appendix 1**). Condition 5(11) of Development Consent DA 344-11-2001-MOD 3 is reproduced below.

“By the end of September in each year after the commencement of development, or other timeframe agreed by the Secretary, a report must be submitted to the Department reviewing the environmental performance of the development, to the satisfaction of the Secretary. This review must:

- a) *describe the development (including any progressive rehabilitation) that was carried out in the previous financial year, and the development that is proposed to be carried out over the current financial year;*
- b) *include a comprehensive review of the monitoring results and complaints records of the development over the previous financial year, including a comparison of these results against the:*
 - *relevant statutory requirements, limits or performance measures/criteria;*
 - *requirements of any plan or program required under this consent;*
 - *monitoring results of previous years; and*
 - *relevant predictions in the documents listed in condition 2(c) of Schedule 2;*
- c) *identify any non-compliance or incident which occurred in the previous financial year, and describe what actions were (or are being) taken to rectify the non-compliance and avoid reoccurrence;*
- d) *evaluate and report on:*
 - *the effectiveness of the noise and air quality management systems; and*
 - *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 financial year to improve the environmental performance of the development.”*



- Legend**
- Quarry Site - ML1633
 - Proposed Quarry Site Extension
 - EL 4473
 - State Forest
 - NPWS Estate

FIGURE 2.1
Locality Plan

This Annual Review documents the works undertaken and environmental performance from 30 June 2020 to 1 July 2021 (the reporting period).

The information presented within this Annual Review has been prepared based on information compiled by Umwelt (Australia) Pty Limited (Umwelt) and provided by Walker Quarries, as well as an inspection of the Quarry undertaken by Umwelt on 10 August 2021. This Annual Review adheres to the format and content requirements identified in the Department of Planning, Infrastructure and Environment's (DPIE) *Annual Review Guideline, Post-approval requirements for State significant mining developments* (DPIE, 2015). It should also be noted that this Annual Review has been prepared based upon the approval and licencing requirements applicable to DA 344-11-2001.

2.2 Walker Quarries

Walker Quarries Pty Ltd was created to carry out mining, processing, transport and other ancillary activities at the Wallerawang Quarry.

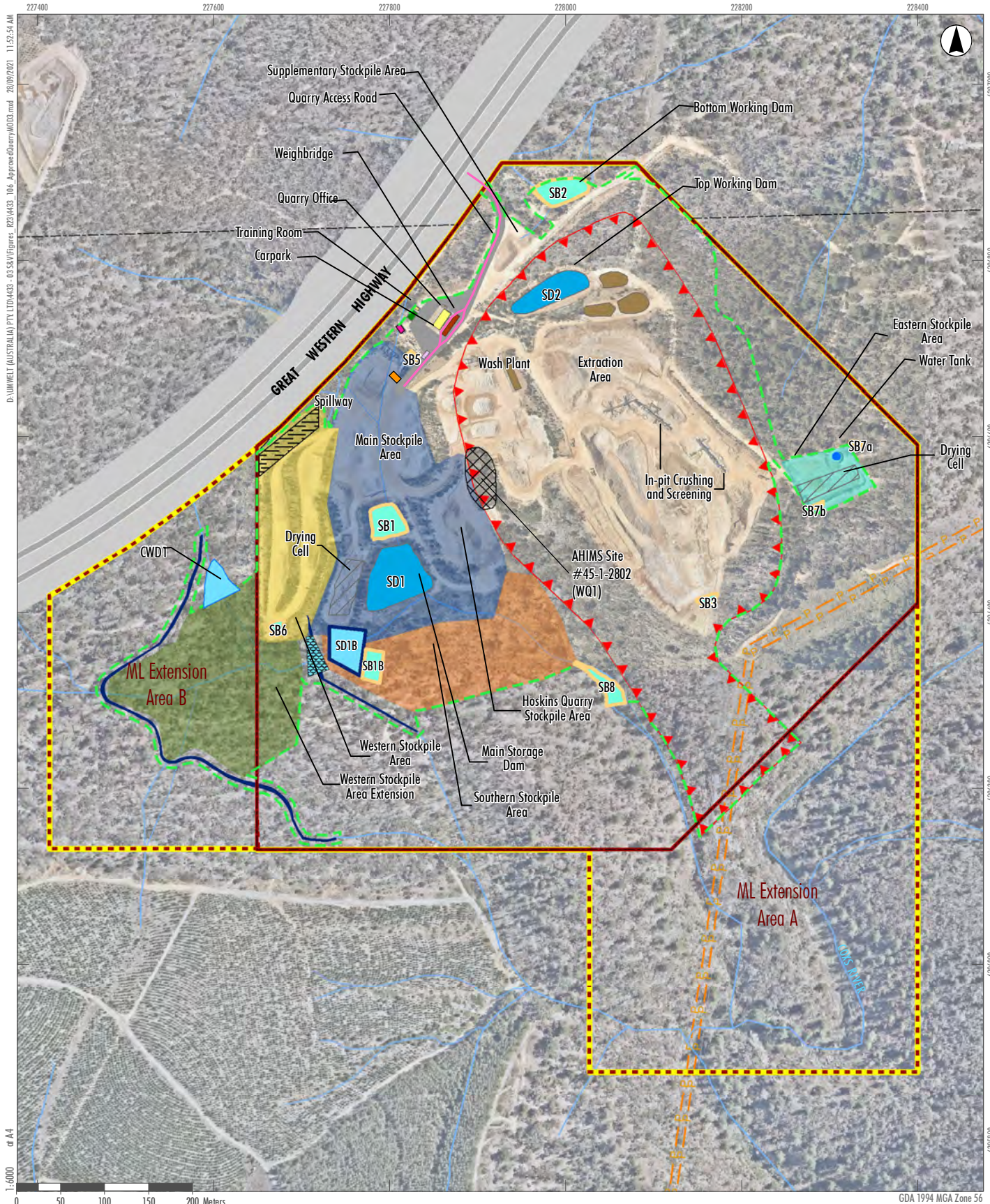
Walker Quarries Pty Ltd is committed to operating the Quarry in a manner that complies with relevant environmental legislation and is environmentally responsible. Walker Quarries Directors maintain a hands-on management style and are either Lithgow or Sydney based.

2.3 Overview of Operations

2.3.1 Approved Activities

The approved activities at the Quarry are as follows (refer also to **Figure 2.2**).

- Extraction of quartzite and other rock aggregate by conventional drill and blast, load and haul methods from an area of 13.3 ha and to a depth of 901 m Australian Height Datum (AHD) (extending to with 1 metre of the groundwater level once established to the satisfaction of the Secretary of the Department of Planning, Industry and Environment (DPIE).
- Construction and use of stockpile areas for storage of extracted and processed material. Currently, the following stockpile areas are maintained at the Quarry:
 - Processing pad
 - Main Stockpile Area
 - Western Stockpile Area
 - Eastern Stockpile Area, and
 - Supplementary Stockpile Area.
- The following additional stockpile areas are approved under DA 344-11-2001 (MOD 3)
 - Southern Stockpile Area, and
 - Western Stockpile Area Extension.



Legend

- Quarry Site Boundary
- Quarry Site (ML1633)
- Quarry Site ML Extension
- EL 4473
- To be developed in future
- Approved Extraction Area
- Main Stockpile Area (935m AHD)
- Southern Stockpile Area (935m AHD)
- Western Stockpile Area
- Western Stockpile Extension (940m AHD)
- Eastern Stockpile Area
- Clean Water Diversion
- Sediment Basins
- Settlement Ponds
- Storage Dam
- Water Tank
- Clean Water Dam
- Silt Cells
- AHIMS Site
- Hydrogen Storage Area
- Visual Amenity Bund
- Electricity Transmission Lines
- Quarry Access Road

FIGURE 2.2

**Approved Quarry Site Layout
(DA 344-11-2001-MOD3)**

- Use of mobile processing plant to process extracted material by crushing, screening and washing, to produce a range of aggregates, pebbles and sand.
 - Crushing to produce coarse aggregates is currently undertaken using two mobile crushing trains operated within the extraction area, with approval for the establishment of fixed plant on the stockpiles areas also retained.
 - Washing and screening to produce finer aggregates and sand is undertaken on the Processing Pad to the immediate west of the Extraction Area. Approval is provided for the relocation of this, or equivalent wash plant on the Quarry stockpile areas at some time in the future.
- Construction and use of an access road, haul roads, and an intersection with the Great Western Highway.
- Transportation of up to 500 000 t per year of quarry products via the Great Western Highway using predominantly truck and dog and B-Double trucks.

2.3.2 Hours of Operation

The approved hours of operation are outlined in **Table 2.1**.

Table 2.1 Hours of Operation

Activity	Hours
Quarrying operations	7.00 am to 6.00 pm Monday to Friday 8.00 am to 1.00 pm Saturday
Loading and dispatch of trucks	Any time, provided activities comply with specified noise criteria
Blasting	9.00 am to 5.00 pm Monday to Friday 9.00 am to 1.00 pm Saturday
Maintenance	Any time, provided activities are inaudible at privately-owned residences

All activities during the reporting period were undertaken within the approved hours of operation.

2.3.3 Employment

The Quarry currently employs five management staff and 10 equipment operators. Employment is expected to remain the same during the next reporting period.

2.4 Key Personnel Contact Details

The key personnel contact names, position and phone numbers are listed in **Table 2.2**.

Table 2.2 Key Personnel Contact Details

Name	Position	24 Hour Contact
Wayne Chapman	Mine Manager	0418 958 779
Trevor Hoffman	Operations Manager	0417 663 222
Paul Hensley	Compliance Advisor	0418 680 022
Kerry Burke	Managing Director	0418 242 619

2.5 Management of Document Preparation

This document has been prepared by Mr. David McQueeney (B.Env.Sc.Mgt), Environmental Consultant. The document was reviewed and approved by Mr. Alex Irwin (B.Sc. (Hons)), Principal Environmental Consultant, both with Umwelt.

Alex and David completed the site inspection of 10 August 2021 noted in **Section 2.1**.

Mr Wayne Chapman, Mine Manager, Walker Quarries, provided technical input and information on Quarry operations and environmental performance during the reporting period. Mr Chapman was present during the site inspection and was assisted during the inspection by Mr. Irwin and Mr. McQueeney.

3.0 Approvals

Table 3.1 presents the approvals and licences held in relation to the Quarry.

Table 3.1 Wallerawang Quarry – Approvals, Leases and Licences

Consent/Lease/Licence	Issue Date	Expiry Date	Details/Comments
Development Approval DA 344-11-2001	19/10/2004 Modified 25/8/2017 (MOD 1) Modified 7/12/2018 (MOD 2) Modified 26/02/2020 (MOD 3)	15/7/2040	Issued by the Minister for Planning
Development Approval DA 019/18	28/2/2018	28/2/2023	Issued by Lithgow City Council for demountable office buildings
Environment Protection Licence EPL 13172	21/10/2012 Last varied 17/7/2018	-	Issued by the Environment Protection Authority
Mining Lease 1633	15/7/2009	15/7/2040	Issued by the Minister for Mineral Resources
Exploration Licence 4473	13/1/1993	12/1/2023	Group Two Minerals
Water Access Licence 42390	5/6/2019	-	0 units Water Source: Upper Nepean and Upstream Warragamba Water Source Water Sharing Plan: Greater Metropolitan Region Unregulated River Water Sources 2011
Water Access Licence 41884	16/5/2018	-	100 units Water Source: Coxs River Fractured Rock Groundwater Source Water Sharing Plan: Greater Metropolitan Region Groundwater Sources 2011
Approval 10CA123169		29/5/2029	Water Supply: <ul style="list-style-type: none"> ▪ Void: Lot 6 DP 872230 ▪ Groundwater Bore: Lot 7 DP872230 Water Use: Mining
Approval 10CA123996		27/7/2030	Water Supply: 150mm Centrifugal Pump on the Coxs River Water Use: Mining

In addition to the approvals and licences listed in Table 3.1, Walker Quarries retains a Compensation Agreement with *Forestry Corporation of NSW* (FC NSW) which allows Walker Quarries to operate within an area of Lidsdale State Forest on Lot 7322 DP1149335 and Lot 7071 DP1201227.

Table 3.2 presents the documentation used by Quarry management to guide day-to-day operations at the Quarry. In accordance with *Condition 5(3)* of DA 344-11-2001, all plans were reviewed, revised and re-submitted to the DPIE² in May 2020 following the issue of DA 344-11-2001.

Table 3.2 Quarry Documentation

Document Title (date)	Date Approved
Supporting Documentation for DA 344-11-2001	
Environmental Impact Statement Proposed Wallerawang Quarry (13/11/2001)	19/10/2004
Supplementary Report to the Environmental Impact Statement Proposed Wallerawang Quarry (July 2002)	
Environmental Assessment for Modification to Operations at the Wallerawang Quarry (DA 344-11-2001) (MOD 1) (4/5/2017)	25/8/2017
Statement of Environmental Effects for Proposed Modification No 2 (MOD 2) to DA 344-11-2001 (Wallerawang Quarry) (October 2018)	7/12/2018
Wallerawang Quarry Modification 3 Statement of Environmental Effects (MOD 3) to DA 344-11-2001 (28/6/2018)	26/2/2020
Supporting Documentation for ML 1633	
Mining Operations Plan (incorporating a Rehabilitation Management Plan)	7/7/2020
Environmental Management Plans	
Environmental Management Strategy (V2.2 August 2020)	21/8/2020
Rehabilitation Management Plan (4 th MOP July 2020)	7/7/2020
Noise Management Plan (V3.0 January 2021)	10/2/2021
Blast Management and Explosives Control Plan (V2.3 August 2020)	19/8/2020
Air Quality Management Plan (V3.0 January 2021)	3/2/2021
Biodiversity Management Plan (V2.3 September 2020)	15/10/2020
Soil and Water Management Plan (V3.0 December 2020)	16/6/2021
Environmental Monitoring Program (V3.0 January 2021)	-
Bushfire Management Plan (V2.2 August 2020)	19/8/2020
Aboriginal Cultural Heritage Management Plan (V3 July 2020)	19/8/2020
Pollution Incident Response Management Plan (10 September 2021)	-

² The Rehabilitation Management Plan was submitted to the Resources Regulator of DPIE in accordance with the *Condition 3(31)*.

4.0 Operations Summary

4.1 Introduction

Figure 4.1 presents an overview of the Quarry layout at the end of the current reporting period (30 June 2021). Operations were undertaken in accordance with the Mining Operations Plan (MOP) in effect over the reporting period (Umwelt, 2020) with an increase in the active disturbance area associated with the vegetation clearing and soil stripping of 1.1 ha of Stage 1 of the Extraction Area extension approved by DA 344-11-2001 (MOD 3). **Photo 4.1** provides an easterly view of the Quarry Site taken from the Western Stockpile Area.

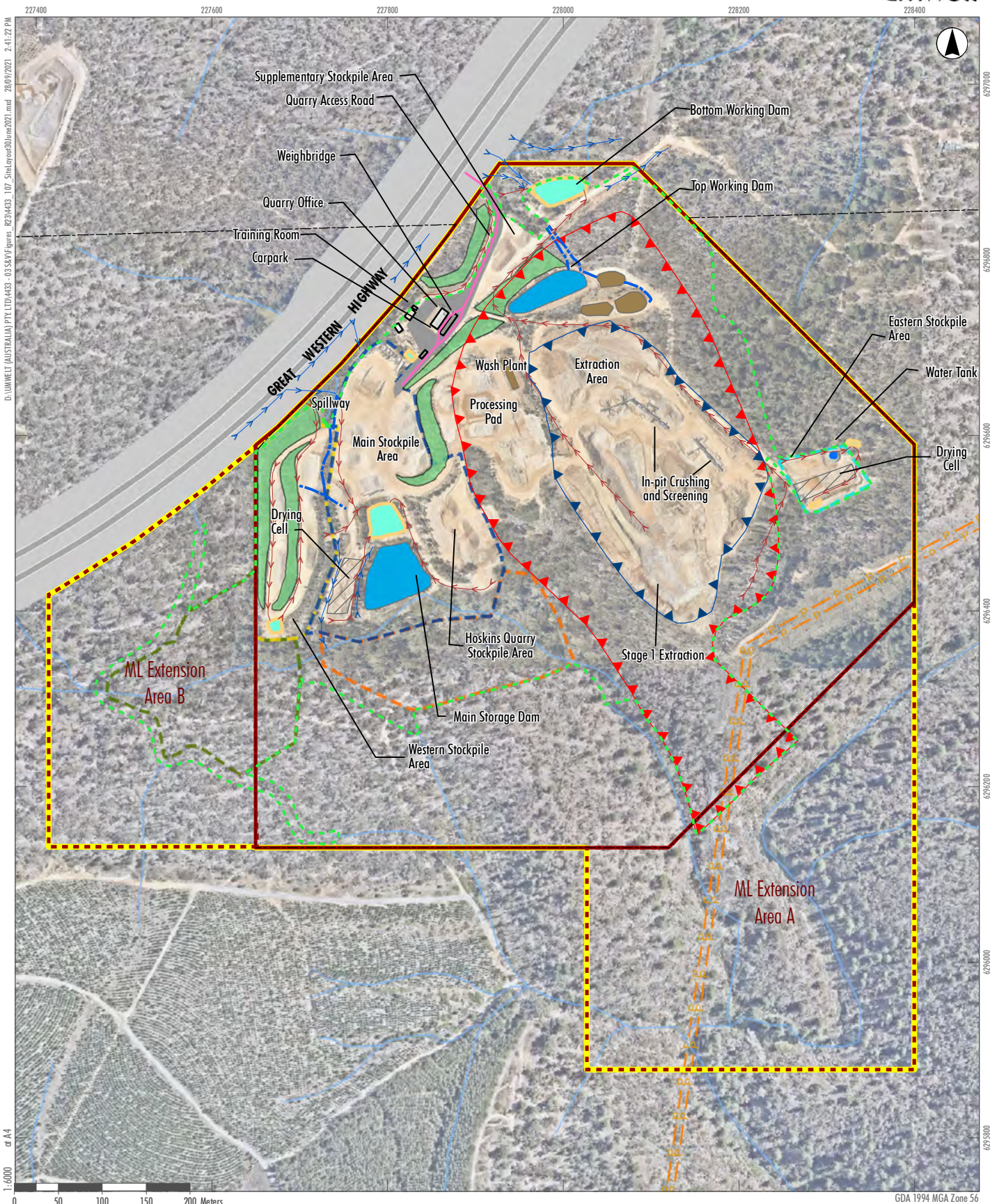


Photo 4.1 Easterly View of the Quarry Site from the Western Stockpile Area

The following sections provide further detail on the activities undertaken over the reporting period, with photographic records where relevant.

4.2 Mining Operations

During the reporting period, the western side of the open cut was reduced in elevation by between 10 and 15 m to increase the exposure of higher quality quartzite (**Photo 4.2** and **Photo 4.3**). In preparation for a widening of the extraction area, and as identified on Plan 3A of the MOP, the Stage 1 extension of the Extraction Area approved by DA 344-11-2001 (MOD3) was cleared of vegetation and stripped of soil (**Photo 4.4**). Details on the management of biodiversity is discuss in **Section 6.6**.



- Legend**
- Quarry Site Boundary
 - Quarry Site (ML1633)
 - Quarry Site ML Extension
 - EL 4473
 - To be developed in future
 - Extraction Area Extent (30 June 2021)
 - Main Stockpile Area (935m AHD)
 - Southern Stockpile Area (935m AHD)
 - Western Stockpile Area
 - Western Stockpile Extension (940m AHD)
 - Eastern Stockpile Area
 - Clean Water Diversion
 - Sediment Basins
 - Settlement Ponds
 - Storage Dam
 - Water Tank
 - Silt Cells
 - Ecosystem Establishment
 - P Electricity Transmission Lines
 - > Clean Water Drain
 - > Dirty water drain
 - Water Pipeline
 - Quarry Access Road

FIGURE 4.1
Site Layout
30 June 2021

Image Source: Nearmap (2020); CEH Survey (2021) Data source: Walker Quarries (2019); Umwelt (2019); NSW LPI DTDB (2019); CEH Survey (November 2016)



Photo 4.2 Quarry Operations (955 mAHD)



Photo 4.3 Exposed Quartzite



Photo 4.4 Stage 1 Extraction Area Extension

The proposed north easterly extension of the extraction area, which formed part of the originally approved extraction area and was also identified on Plan 3A of the MOP, was not undertaken during the reporting period.

A total of 217,812 t of quartzite and other materials were extracted, processed and sold during the reporting period. **Table 4.1** presents the material movements during the reporting period and the anticipated movements during the next reporting period.

Table 4.1 Production Summary – tonnes

Material	Approved limit (specify source)	Previous reporting period (actual)	This reporting period (actual)	Next reporting period (forecast)
Soil (m ³)	N/A	0	3,200	6,000
Overburden (m ³)	N/A	0	0	0
Product (sold and transported off site) (t)	500,000	208,032	217,812	230,000

Source: Walker Quarries Pty Ltd

A copy of Form S1 submitted to *Mining, Exploration and Geoscience* (MEG) during the reporting period is included as **Appendix 2**. It is noted that the Form S1 only reports on the products for which royalties are payable, noting that non-mineral select fill and other rock products were also produced and sold during the reporting period.

In summary production and sales during the reporting period was as follows.

- Quartzite aggregates, road base and gabion/ballast: 126,103 t.
- Manufactured sand: 50,619 t.
- Quartzite pebble: 89 t.
- Non-quartzite select fill and other products: 41,000t.

A total of 8 blasts were initiated during the reporting period. **Table 4.2** presents the date and volume of each blast. All blasts were production blasts and occurred within the approved extraction area.

Table 4.2 Blasting Operations during the Reporting Period

Blast Date	Volume of Blast (tonnes)
9 September 2020	44,019
16 September 2020 (2 blasts concurrent)	23,352
16 December 2020	57,387
24 February 2021	52,114
13 April 2021	-
13 May 2021 (2 blasts concurrent)	80,728
Total	285,100

Source: Walker Quarries Pty Ltd

Walker Quarries and blast contractors implement a continuous improvement protocol for blasting through implementation of the following procedures (which are nominated in the *Blast Management Plan*).

- Blast energies are minimised as far as possible.
- Electronic detonators are not used at the Quarry at any time.
- Quality control practices are implemented on the ground to ensure blasts are kept within design tolerances.
- Adequate burden is maintained on all faces to prevent blowouts and blast anomalies.
- Blasts are designed to ensure fly-rock, dust and fumes, and the impact/damage to people, property, livestock and infrastructure, are limited as much as reasonably practicable.
- Each blast is monitored to confirm compliance with air blast overpressure and ground vibration criteria.
- Following each blast, the area surrounding the blast location is inspected and fly-rock distribution to the front, rear and both sides of the blast site observed.
- Blast contractors, in conjunction with the Quarry Manager, review blast monitoring records to enable continuous improvement and quality control, resulting in continual development of optimum blast parameters.

The results of blast monitoring are provided in **Section 6.4.2 (Table 6.7)**.

4.3 Other Operations

4.3.1 Construction Operations

No construction operations were undertaken during the reporting period.

4.3.2 Processing Operations

The processing operations involve the use of a series of crushers and screens to crush, separate and wash the quartzite into various size aggregates and sands. The development consent does not impose restrictions on the processing equipment which may be used subject to compliance with noise and air emission criteria. Walker Quarries operates two crushing and screening circuits, as well as a washing circuit as follows.

Crushing and Screening Circuits

There are currently three crushing and screening circuits operating, one producing road base materials, a second producing aggregates of various sizes and a third associated with the wash plant. The number of crushing trains and arrangement of the crushing and screening equipment may be modified in accordance with DA 344-11-2001 subject to meeting noise and air emission criteria.

Both crushing circuits were operated within the extraction area during the reporting period (**Photo 4.5** and **Photo 4.6**).



Photo 4.5 Aggregate Crushing Train



Photo 4.6 Road Base Crushing Unit

Washing Circuit

A sand washing plant was operated on the Processing Pad with a series of silt settlement cells located adjacent to the washing plant and to the immediate north of the extraction area.

Water is added to the <7 millimetre (mm) material over a variable sized vibrating screen (mesh sizes of 7 mm or 5 mm). This initial mixing of water and rock, along with the vibrating nature of the screen, allows for the removal of fine clay and silt particles. Water sprays are also used to remove additional clays and silts with the heavier and washed aggregates moving to the bottom of the tanks and the silt containing water drawn off the top and pumped initially to a water storage sump to the immediate east of the processing plant for initial settlement. The <7 mm or <5 mm quartzite aggregate collected at the base of the tank is then dewatered with the aggregates stacked before being loaded to trucks and delivered to stockpile. The washing plant incorporates a Silt Arrestor to improve the recovery of water and produce a drier product.

The washing plant was also used to wash and grade a small volume of cobble conglomerate to produce decorative pebble products for landscaping during the reporting period.

4.3.3 Stockpiling Operations

The Quarry features several hardstand stockpile areas identified on **Figure 2.2**, which were used as follows during the reporting period.

- The Main Stockpile Area (MSA) was operated as the principal stockpile areas for quarry products (see **(Photo 4.7)**).



Photo 4.7 **Main Stockpile Area**



Photo 4.8 **Western Stockpile Area**

- Supplementary Stockpile Area (SSA), which was used for the stockpiling of crushing and screening reject material prior to sale or use of this material in rehabilitation works.
- Western Stockpile Area (WSA), which was used for the stockpiling of smaller volume and specialty products (**Photo 4.8**).
The stockpile areas of the two-tiered WSA is limited in width. During the inspection of 10 August 2021, truck movement and loading was observed to operate efficiently and safely. A small over-topping of the upper tier, observed during the 2019-2020 Annual Review inspection remains. It is noted no additional over-topping was observed suggesting that measures implement by Quarry management to increase inspections has been effective.
- Eastern Stockpile Area (ESA), which was used for the drying of silts removed from the sand washing plant silt cells prior to use in rehabilitation.
With markets for the dried silt identified, this stockpile area will be used for the future stockpiling of low volume/low demand products as was originally intended.
- Hoskins Quarry Stockpile Area (HQSA), which has continued to be used for the stockpiling of crusher dust/scalps, also identified as McCloskey Sand.
Similar to the WSA, the overtopping of the HQSA observed during the 2019-2020 Annual Review inspection remains. Quarry management confirmed this would be remediated and increased inspections undertaken to ensure stockpiles maintain sufficient 'free board' to the edge stockpile bunding to present future over-topping.

4.3.4 Product Transportation

Product transported off site during the reporting period was approximately 189,967 tonnes of material, below the approved annual transportation volume of 500,000 tonnes.

Walker Quarries reports the number of truck movements from the Quarry on their website on a 6 monthly basis, in accordance with *Condition 3(19)* of DA 344-11-2001. Truck movements are currently reported for the following periods:

- 1 July – 31 December, and
- 1 January -30 June

There was a total of 7,874 truck movements during the period 1 July 2020 to 30 June 2021.

4.3.5 Exploration Activities

During the reporting period an Annual Exploration Progress Report for Exploration Licence 4473 was prepared by Rangott Mineral Exploration Pty Ltd and submitted to DPIE, in accordance with the requirements of ML 1633 (Rangott, 2021) (refer to **Appendix 3**). The report covered activities for the period 13 January 2020 to 12 January 2021. Exploration activities undertaken during this period were focussed on land access negotiations with Forestry Corporation of NSW, a review of published geology maps and historic geological reports and desktop geological interpretation. Geological reconnaissance mapping was also undertaken within Lidsdale State Forest and along public roads to the north of the licence area in order to determine the extent of Permian marine conglomerates in the area. No exploration boreholes were drilled during this period.

4.4 Next Reporting Period

Figure 4.2 presents the proposed layout of the Quarry at the end of the next reporting period. A summary of the proposed activities proposed during the 2021-2022 reporting period are as follows.

Mining

The extraction area is proposed to be extended to the northeast and south of the current disturbance, taking in areas which formed part of the originally approved extraction area. In accordance with the Quarry Biodiversity Management Plan, a pre-clearance vegetation survey will be completed to confirm the absence of native fauna, key fauna habitat such as nests or roosting sites or threatened flora prior to disturbance. These areas are identified on Plans 3A and 3B of the MOP (Umwelt, 2020).

Blasting will continue to be required to fracture the quartzite and other rock for extraction during the next reporting period. Between five and 10 blasts will be undertaken with Walker Quarries anticipating production to increase during the next reporting period to approximately 230,000t (**Table 4.1**).

Construction

The following construction is planned for the 2021-2022 reporting period as follows.

- Upgrades to the Quarry Hydrocarbon Storage Area will be undertaken. The form of these upgrades remains to be defined and is the subject of ongoing review, however, aims to reduce the potential for hydrocarbon spillage and pollution of the adjacent drainage line.
- Preparatory earthworks and establishment of foundations is planned on the Processing Pad for the placement of a new wash plant (which will replace the current wash plant once installed).
- An extension to the main Quarry office and amenities buildings is to be undertaken, subject to the approval of a separate development application to Lithgow City Council.

Processing

No changes to processing operations are planned during the 2021-2022 reporting period, noting that the location of the crushing trains within the extraction area may be relocated from time to time. It is expected that the aggregate crushing circuit, currently located in an elevated position on the northern perimeter of the extraction area will be relocated to the operating floor of the extraction area during the next reporting period. The ultimate aim is to relocate the main aggregate crushing train to a lower elevation (950 mAHD or lower) as the extraction area is widened to the west.

Sand washing will continue as current during the 2021-2022 reporting period.

Stockpiling Operations

The Quarry is currently constrained by available area for the stockpiling of the various Quarry products.

- During the 2021-2022 reporting period, the following is planned to reduce this constraint.
- The Processing Pad of the MSA will be extended to the south taking in the area of former AHIMS Site #45-1-2802. The salvage and relocation of the artefacts of the former AHIMS site was completed during the reporting period (refer to **Section 6.7.2**).
- Silt drying areas will be reallocated to product stockpiling as the material is dispatched from the Quarry Site for application to land on external sites.

5.0 Actions Required from Previous Annual Review

Correspondence from the Department of Planning, Industry and Environment regarding the *Annual Review 2020* was provided on 10 October 2019. No actions were identified in this correspondence.

Table 5.1 describes the incomplete actions outlined in the 2018-2019 Annual Review and additional actions identified in the 2019-2020 Annual Review.

Table 5.1 Actions from the Previous Annual Review

Acton Required from Previous Annual Review	Requested By	Action Taken	Refer to Section
2018-2019 Annual Review			
Sediment basins (SB5, SB7a and SB7b) require desilting and enlarging to ensure design storage capacity	Walker Quarries/ Operator	Desilting is undertaken every 1 to 2 months. Sediment basin enlargement is planned for the 2021-2022 reporting period to coincide with a planned update to the Quarry Erosion and Sediment Control Plan (Umwelt, 2020) (approved by DPIE June 2021).	7.2.3
2019-2020 Annual Review			
Finalise and implement all environmental management plans following approval of MOD 3.	Walker Quarries/ Operator	All environmental management plans have been reviewed and approved by DPIE.	3.0 (Table 3.2)
Commission an Independent Environmental Audit of the quarry in accordance with Schedule 5 Condition 13 of DA 344-11-2001	Walker Quarries/ Operator	Independent Environmental Audit Completed by James Bailey and Associates on 19 July 2021.	10.2
Apply for a variation to EPL 13172 to update noise limits to reflect the updated noise criteria of DA 344-11-2001-MOD 3	Walker Quarries/ Operator	Complete.	6.3.1
Update the Environmental Management Register to reflect updated and approved management plans. Include Environmental Inspection Checklist, Haul Road Inspection Checklist and Wallerawang Site SHE Schedule will be updated.	Walker Quarries/ Operator	An environmental management register was prepared during the previous reporting period. Additional checklists will be prepared during the next reporting period.	6.1
Remove redundant hay bale protection and sediment fencing	Walker Quarries/ Operator	These have been removed.	7.2.3

Action Required from Previous Annual Review	Requested By	Action Taken	Refer to Section
Quarry operations will continue generally as completed during the reporting period and in accordance with the Quarry MOP. Should any deviations from this be required, these will only be undertaken subject to approval by the DPIE and (if required) approval of an updated MOP	Walker Quarries/ Operator	Operations have been undertaken in accordance with the MOP. No deviations noted.	4.2
Rehabilitation activities will be restricted to the maintenance of areas already rehabilitated and ad hoc stabilisation and revegetation works as required.	Walker Quarries/ Operator	No additional rehabilitation activities undertaken during the reporting period. Some remedial works may be required on some slopes where establishment of vegetation is patchy.	8.1
An updated Landscape Planting Plan will be prepared to enable the more visible areas of the Quarry Site to be better screened or obstructed from external vantage points (including the Great Western Highway	Walker Quarries/ Operator	Completed (December 2020).	8.1

6.0 Environmental Performance

6.1 Introduction

Environmental monitoring is undertaken to determine the degree of impact the Quarry is having on the environment. Assessment of these results can establish if environmental management systems are being successfully applied in the short term and if the management systems need to be amended.

Appropriate environmental monitoring, apart from satisfying necessary statutory requirements, demonstrates to the local community and relevant authorities Walker Quarries commitment to the protection of the environment. **Figure 6.1** provides the monitoring locations referred to in this section.

Walker Quarries has established an Environmental Management Register, where all environmental management commitments are compiled and can be viewed by date required, person responsible, environmental parameter. The register is regularly reviewed and updated as required.

During the reporting period, an additional environmental commitments checklist was drafted. The checklist establishes all environmental commitments included in the various management plans and allows for internal or external audit of these. Walker Quarries plans of having an external consultancy inspect and review implementation of these commitments against the checklist at least twice during each reporting period.

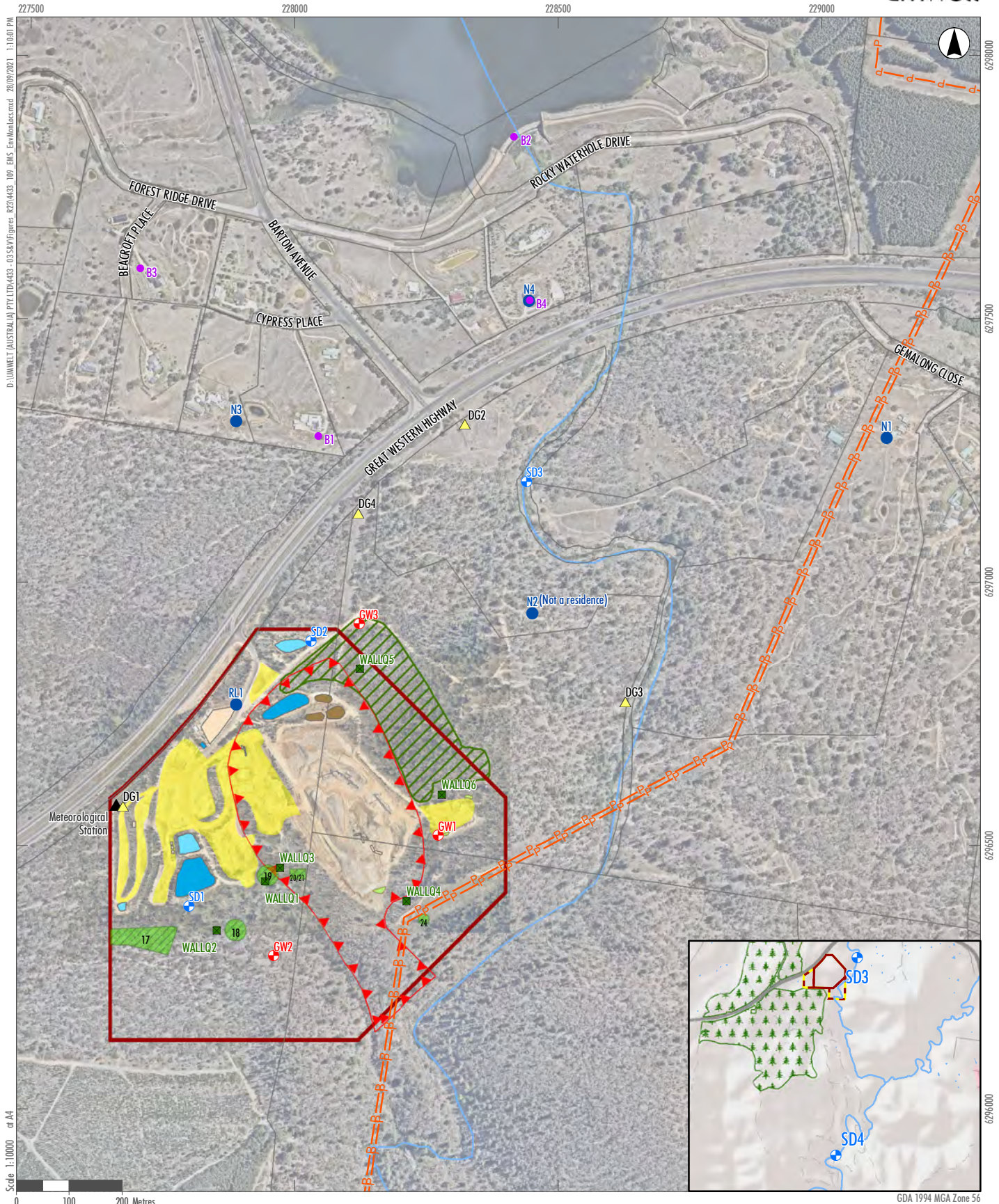
The following sub-sections present the results of the various monitoring programs undertaken throughout the reporting period. Where appropriate, results of the previous years' monitoring are also presented for comparative purposes.

6.2 Meteorological Monitoring

A meteorological monitoring station has been operating at the Quarry, in its current location, since July 2016. Data is downloaded at 15-minute intervals and Quarry management can download meteorological files in real time should interrogation of data be required, e.g. in response to a noise complaint or air quality monitoring results.

During the reporting period, the meteorological monitoring station was upgraded to allow for collection of the standard deviation of wind direct (sigma theta) and Pasquil - Gifford (noise category) determination. The addition of these data categories will allow for greater power of analysis should noise complaints be received or concerns over Quarry noise levels be raised by the community, Council or the EPA.

Table 6.1 presents key data outputs from the meteorological station for each month. Separate data files can be supplied as required for data validation.



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Scale 1:10000 or A4

- Legend**
- Quarry Site - MLI633
 - Stockpile Area
 - Sediment Basin
 - Silt Cell
 - Storage Dam
 - Approved Extraction Area
 - Cadastral boundary
 - Remnant Patches of *Bursaria spinosa*
 - Weed Spraying
 - ▲ Air Quality Monitoring Locations
 - Biodiversity Monitoring Locations
 - Blast Monitor
 - ▲ Meteorological Station
 - Noise Monitoring Locations
 - ⊕ Surface Water Monitoring Location
 - Groundwater Bore Location
 - P— Power Line

Image Source: Google Earth (2016); Nearmap (2020); CEH Survey (2021) Data source: NSW DFSI (2019); CEH Survey (November 2016)

FIGURE 6.1
Environmental Monitoring Locations and Weed Spraying

Table 6.1 Meteorological Monitoring Results

Year		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Annual
Average Temperature (°C)														
2019/20	Max	12.2	12.4	16.6	21.5	24.8	28.5	28.7	23.2	20.1	18.0	13.3	12.0	19.3
	Min	1.4	-0.3	2.0	5.2	8.6	11.1	15.2	14.0	10.9	7.3	3.1	2.6	6.8
2020/21	Max	No Data	No Data	No Data	No Data	31.5	33.6	25.6	29.0	29.8	20.0	17.0	17.0	26.0
	Min	No Data	No Data	No Data	No Data	11.0	9.2	13.2	7.8	3.9	-0.8	-3.5	-3.3	4.7
Rainfall (mm)														
2019/20	Total	18.1	27.1	51.5	9.9	21.1	1.1	69.8	189.6	102.9	79.6	47.1	34.6	652.4
	No. Rain Days	13.0	11.0	10.0	8.0	7.0	2.0	16.0	17.0	20.0	10.0	21.0	17.0	152.0
	Max. Daily Rainfall	8.2	12.0	20.6	5.8	13.6	0.7	21.8	51.0	30.0	29.2	15.4	13.4	221.7
2020/21	Total	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
	No. Rain Days	No Data	No Data	No Data	No Data	No Data	No Data	5	17	15	7	15	20	79
	Max. Daily Rainfall	No Data	No Data	No Data	No Data	No Data	No Data	11.0	24.6	34.0	0.2	12.8	17	94.6

Source: Walkers Quarry Pty Ltd (2021)

6.3 Noise

6.3.1 Performance Criteria and Predicted Impacts

Table 6.2 identifies the relevant noise-related performance criteria for residences surrounding the Quarry Site identified by *Condition 3(3)* of DA 344-11-2001. These criteria are the same as those of Condition L4.1 of EPL 13172 (as varied on 16 November 2020).

Table 6.2 Noise-related Performance Criteria

Receiver	Day dB(A) ¹	Evening dB(A) ¹	Night dB(A) ¹
Any residence on privately owned land ²	43	39	35

Notes ¹ Units = LAeq 15 minutes

² The criteria do not apply where an agreement is negotiated with a landowner to exceed the noise criteria, and the DPIE has been advised in writing of the terms of this agreement. Walker Quarries holds an agreement with the owner of Lot 7 DP872230 for noise levels exceeding the noise criteria of Condition 3(3) (Table 2) of DA 344-11-2001 (refer to **Appendix 4**).

The noise criteria presented in **Table 6.2** are based on the results of a *Noise and Vibration Impact Assessment* (NVIA) to quantify potential noise emissions associated with the proposed extension to the Quarry as part of the Mod 3 application (MAC, 2019). As such, compliance with the criteria is expected subject to implementation of the noise management measures nominated in the Quarry *Noise Management Plan*.

MAC (2019) also included sound power levels and relevant criteria for individual pieces of equipment operating at the Quarry as part of the NVIA. This criteria is included in the monitoring results tables in **Section 6.3.3**.

6.3.2 Measured Performance

Section 7.3 of the *Noise Management Plan* (NMP) identifies that attended noise monitoring will be undertaken at least twice annually at the following three off-site monitoring locations as shown on **Figure 6.1**, which represent the closest residential receivers to the Quarry.

- N1: “Gemalong” property residence.
- N2: “Cockatoo Pines” property boundary.
- N3: Cypress Place, Wallerawang.
- RL1: located adjacent to the Quarry office

During the reporting period it has been confirmed that there is no inhabited residence on the “Cockatoo Pines” property. Furthermore, Walker Quarries holds an agreement with this landowner for noise levels exceeding those nominated in **Table 6.2**. As such, Noise Monitoring Location N4 (located at 42 Rocky Waterhole Drive) has been subsequently added (refer to **Figure 6.1**) and will replace N2 once the *Noise Management Plan* is updated and approved by the DPIE.

Attended noise monitoring programs were undertaken on 1 September 2020, and 31 March 2021 by Muller Acoustic Consulting Pty Ltd. The resulting reports (MAC, 2020 and MAC, 2021) are presented as **Appendix 5**.

All noise monitoring was undertaken under the following operational conditions.

- Extraction of quartzite using standard load and haul techniques.
- Processing of extracted quartzite and stockpiling.
- Transportation of quarry products.

Noise monitoring was undertaken at monitoring locations N1, N2, N3 and RL1 (see **Figure 6.1**) during each monitoring campaign. The noise monitoring results are summarised in **Table 6.3** and **Table 6.4**.

Section 7.4 of the *Noise Management Plan* (NMP) identifies that the Sound Power Level (SWL) of active mobile and fixed plant operating at the quarry will be measured on an annual basis and reported in the Annual Review. SWL monitoring was undertaken during the September 2020 (for acoustically significant items of plant) and March 2021 (annual SWL assessment) monitoring rounds. Results for the September 2020 at RL1, the SPL for the acoustically significant items of plant was calculated to be 104dB LA_{eq(15min)}. Results for the March 2021 monitoring are summarised in **Table 6.3**, **Table 6.4** and **Table 6.5**.

Table 6.3 Noise Monitoring Results – 1 September 2020

Location	Date and Time (hrs)	Attended Noise Monitoring Results (dB(A))				Criteria dB(A)	Met Conditions ¹		Comments
		Total Measured			Site Contribution LA _{eq}		Wind Speed (m/s)	Wind Direction	
		LA _{max}	LA _{eq}	LA ₉₀					
N1	1/9/20, 11:24	63	48	39	<30	43	1.4	E	Traffic 39-59; Farm Machinery 36-49, Wind 32-36, Quarry Inaudible
	1/9/20, 12:36	62	50	42	<32 (Quarry Inaudible)	43	1	E	Traffic 36-60, birds 36-44, dogs 49-62, Farm Machinery 30-36.
N2	1/9/20, 10:08	57	45	40	<30	43	0.1	E	Traffic 36-57; Birds 38-51; Aircraft 40-44; Quarry Inaudible.
	1/9/20, 11:55	65	46	39	<30	43	1.0	E	Traffic 37-53; Birds 36-42; Quarry Inaudible, Operator Noise.
N3	1/9/20, 10:49	65	48	36	<30	43	0.5	E	Traffic 35-61; Birds 36-41; Quarry Inaudible.
	1/9/20, 12:16	61	45	35	<30	43	1	E	Traffic 33-61; Dogs 33-36, Operator Noise, Residential Noise 34-38; Quarry Inaudible.
RL1	1/9/20, 10:30	74	58	55	58	N/A	1.6	E	Site Vehicles 50-74, Generator and Sand Plant 56-60, Reverse Alarm 54-57.
	1/9/20, 13:02	79	62	60	62	N/A	1.2	E	Generator and Sand Plant 59-61, Site Vehicles 55-60.

Notes ¹ Meteorological data was recorded with a hand-held anemometer, N/A: Not applicable

Source: Muller Acoustic Consulting (2020) – Tables 4-7

Table 6.4 Noise Monitoring Results – 13 March 2021

Location	Date and Time (hrs)	Attended Noise Monitoring Results (dB(A))				Criteria dB(A)	Met Conditions ¹		Comments
		Total Measured			Site Contribution LA _{eq}		Wind Speed (m/s)	Wind Direction	
		LA _{max}	LA _{eq}	LA ₉₀					
N1	31/3/21, 11:24	63	50	43	<43	43	0.1	SW	Traffic 40-63, Birds 40-48, Quarry Inaudible
	31/3/21, 14:00	62	47	41	<43	43	0.2	NW	Traffic 42-62, Aircraft 47-56, Birds 42-46, Quarry Inaudible.
N2	31/3/21, 13:34	63	53	48	53	43	0.5	W	Quarry screening plant 48-63 Wind in trees <51
	31/3/21, 15:04	62	45	42	48	43	0.4	W	Birds 40-52, Traffic 40-62, Screen Plant 46-51.
N3	31/3/21, 11:44	62	49	42	<25	43	0.1	SW	Traffic 38-62, Birds 38-42, Local residential noise 38-44, Quarry Inaudible.
	31/3/21, 14:20	64	50	46	<25	43	0.3	WNW	Traffic 44-64, Birds 44-48, Local residential noise 44-58, Quarry Inaudible.
RL1	31/3/21, 13:12	70	60	59	62	N/A	0.1	SW	Quarry Generator 58-62, Quarry Traffic 62-70, Quarry Pump 58-62.
	31/3/21, 14:42	70	64	63	62	N/A	0.3	W	Quarry Generator 62-64, Quarry Traffic 62-70, Quarry Pump 62-64.

Notes ¹ Meteorological data was recorded with a hand-held anemometer, N/A Not applicable

Source: Muller Acoustic Consulting (2021) – Tables 5-8

Table 6.5 Sound Power Level Monitoring Results – March 2021

Plant	Sound Power dB(A) Lw	Criteria/Target ¹
Komatsu Loader WA480 FEL	97	100
Komatsu MH400 #1	96	106
Komatsu MH400 #2	98	106
Screen and Crusher	119	111
Komatsu PC450 LC Ex 201	105	109
Komatsu PC450 LC Ex 202	105	109
Atlas Copo ECM 660	112	115
Volvo 6 Wheeled Water Cart	95	101
Total Site Sound Power Level	120	121

Note ¹ Total logarithmic sum of the overall site criteria (as reported in MAC, 2020)

Source: Muller Acoustic Consulting (2021) – Table 9.

6.3.3 Discussion and Analysis

Monitoring during the reporting period at locations N1 and N3 confirmed compliance with the assessment criteria in all instances during the reporting period. The attended monitoring program found that the Quarry was audible at these locations (over background noise levels) during several offsite measurements however the quarry's contribution during the measurements was calculated to be well below the daytime assessment criteria of 43 dB(A). As such, there are no identifiable trends in noise levels, except the continued compliance of the operation.

An exceedance of the applicable noise criteria was identified a location N2 during March 2021 attended compliance monitoring. The exceedance was identified predominately as the screening plant. As per *Condition 3(3B)* of DA344-11-2001, the Quarry has a private agreement in place with this residence and accordingly noise criteria are not applicable at this location.

The SWL testing of operational quarry equipment undertaken in September 2020 and March 2021 identified that whilst the SWL of a number of individual pieces of plant exceeded the SWL criteria/target during the September 2020 and March 2021 testing, the overall sound power of items of plant used at the Quarry are below target sound power levels outlined in MAC (2019).

The monitoring results which indicate the Quarry as generally inaudible from residential receivers is supported by the fact that only query over quarry noise was raised during the reporting period (on 14 July 2020 by the owner of 42 Rocky Waterhole Drive). The landowner noted his query was not a complaint but noted activities at the Quarry had been heard (which was unusual). The Quarry Manager at the time visited the location and took noise readings using a noise logger. At the time of the visit, the Quarry was not audible. However, the Quarry offered to add the residence on 42 Rocky Waterhole Drive as a noise monitoring point and this was accepted by the owner.

6.4 Blasting

6.4.1 Performance Criteria, Public Notices and Predicted Performance

Condition 3(9) of DA 344-11-2001 requires Walker Quarries during blasting operations to:

- Implement best practice management to:
 - protect the safety of people and livestock
 - protect public or private infrastructure and property from damage
 - minimise the dust and fume emissions.
- Operate a suitable system to enable the local community to get up-to-date information on the proposed blasting schedule on site.
- Carry out regular monitoring to determine whether the development is complying with the relevant conditions of this consent.

A blast notification board, detailing the date and time of the next blast is maintained at the Quarry entrance on the Great Western Highway and updated at least 24 hours before each blast. In addition, Walker Quarries provides specific notification of individual blasts to any landowner, within 2 km of the Quarry who has registered an interest in being notified about the blasting schedule at the Quarry.

Table 6.6 presents the airblast overpressure and ground vibration performance criteria identified in *Condition 3(6)* of DA 344-11-2001.

Table 6.6 Blasting-related Performance Criteria

Receiver	Airblast Overpressure (dB Linear Peak)	Ground Vibration (mm/s)	Allowable Exceedance
Any residence on privately-owned land	120	10	0%
	115	5	5% of the total number of blasts over a period of 12 months
All public infrastructure	-	50	0%

The Blast Management and Explosives Control Plan identifies that blast monitoring will be undertaken at three locations, B1, B2 and B3, for each blast event, as shown in **Figure 6.1**. During the previous reporting period, a new blast monitor (B4) was installed at a residence of 42 Rocky Waterhole Drive at the request of the resident. Monitoring at this location commenced during the 1 April 2019 monitoring event and continued during this reporting period. Results are included in **Table 6.7**.

In addition to the above criteria, *Condition 3(1)* of DA 344-11-2001-MOD 3 permits blasting between 9:00am and 5:00pm, Monday to Friday, and between 9:00am and 1:00pm on Saturdays. No blasting is permitted on Sundays or Public Holidays.

The NVIA prepared to quantify potential noise and vibration emissions associated with the proposed extension to the Quarry as part of the Mod 3 application (MAC, 2019) predicts compliance with relevant criteria would be achieved.

6.4.2 Measured Performance

Table 6.7 presents the results of blast monitoring during the reporting period.

Table 6.7 Blast Monitoring Results

Date		B1 (Intersection)		B2 (Dam Wall)		B3 (Residence)		B4 (Residence)	
		Ground Vibration (mm/s)	Air Blast (dB)	Ground Vibration (mm/s)	Air Blast (dB)	Ground Vibration (mm/s)	Air Blast (dB)	Ground Vibration (mm/s)	Air Blast (dB)
Criterion	95%/yr	5	115	5	115	5	115	5	115
	100%	10	120	10	120	10	120	10	120
09/09/2020		0.80	101.9	0.57	105.5	0.69	106.5	0.81	101.9
16/09/2020		N/T	N/T	N/T	N/T	N/T	N/T	N/T	N/T
16/09/2020		N/T	N/T	0.61	102.8	N/T	N/T	0.53	105.5
24/02/2021		0.52	105.5	N/T	N/T	N/T	N/T	1.71	98.8
13/04/2021		0.73	105.5	N/T	N/T	N/T	N/T	N/T	N/T
13/05/2021		N/T	N/T	N/T	N/T	N/T	N/T	N/T	N/T

Note: N/T No Trigger. Blast was not sufficient to 'trigger' monitors, which were set to trigger at 95dB (air blast) and 0.05mm/sec (ground vibration).

Source: Walker Quarries Pty Ltd

6.4.3 Discussion and Analysis

The criteria of 5 mm/s for ground vibration and 115 dB for air blast overpressure were not exceeded during the reporting period. During the six blast events, B1 and B4 were triggered on three occasions, B2 on two occasions and B3 on a single occasions.

The results for ground vibration and air overpressure is consistent with the previous reporting period. While the number of triggering blasts has increased, overall there is no identifiable trend in monitored ground vibration and air blast overpressure levels since the commencement of blasting operations at the Quarry.

6.5 Air Quality

6.5.1 Performance Criteria and Predicted Impacts

Table 6.8 presents the air quality performance criteria presented in Condition 3(11) of DA 344-11-2001.

Table 6.8 Air Quality-related Performance Criteria

Pollutant	Averaging Period	Criterion
Particulate matter < 10 µm (PM ₁₀)	Annual	25 µg/m ³
Particulate matter < 10 µm (PM ₁₀)	24 hour	50 µg/m ³
Particulate matter < 2.5 µm (PM _{2.5})	Annual	8 µg/m ³
Particulate matter < 2.5 µm (PM _{2.5})	24 hour	25 µg/m ³
Total suspended particulates (TSP)	Annual	90 µg/m ³
Deposited dust	Annual Incremental Increase	2 g/m ² /month
Deposited dust	Annual Average Total Deposited Dust	4 g/m ² /month

An Air Quality Impact Assessment undertaken by Ramboll Australia Pty Ltd (Ramboll) in 2019 to assess potential air quality impacts from the proposed modification to Quarry operations (Ramboll, 2019) identified baseline concentrations of key air emissions as follows.

- Annual average PM₁₀ concentration – 18.8 micrograms per cubic metre (µg/m³)
- Annual average PM_{2.5} concentration – 7.0 µg/m³
- Annual average total suspended particulate (TSP) concentration – 47.1 µg/m³
- Annual average dust deposition – 1.5 grams per square metre per month (g/m²/month).

The AQIA (Ramboll, 2019) predicted no receptors would experience exceedances of the air quality impact assessment criteria as a result of the project.

6.5.2 Measured Performance

6.5.2.1 Particulate Matter

The Quarry operated in accordance with the *Air Quality Management Plan (AQMP)* as most recently approved by DPIE on 3 February 2021.

Deposited Dust

Deposited dust was monitored over the reporting period in accordance with the AQMP. Locations of the deposited dust monitoring locations are shown on **Figure 6.1**. **Table 6.9** presents the results of the deposited dust monitoring program for 2020/21 and the 2019/20 average for comparison, while **Figure 6.2** presents these results graphically.

Table 6.9 Deposited Dust Monitoring Results

Start Date	End Date	Monitoring Location				Criterion
		DG1	DG2	DG3	DG4	
2019/20 Annual Average		0.9	1.4	1.3	1.2	4.0
30/6/2020	30/7/2020	0.4	3.6	0.4	1.1	4.0
30/7/2020	31/08/2020	0.9	1.8	0.6	1.4	4.0
31/08/2020	29/09/2020	1.2	1	1.2	1.4	4.0
29/09/2021	29/10/2021	1.2	0.4	0.3	1.2	4.0
29/10/2020	27/11/2020	1.1	1.1	1.6	1.2	4.0
27/11/2020	24/12/2020	1.5	0.5	0.7	1.1	4.0
24/12/2020	23/01/2021	0.9	0.4	0.7	0.7	4.0
23/01/2021	22/02/2021	1.2	0.6	2	0.7	4.0
22/02/2021	24/03/2021	0.2	0.1	2.4	0.6	4.0
24/03/2021	23/04/2021	0.8	0.4	0.3	0.4	4.0
23/04/2021	22/05/2021	1.6	1.6	1.1	1.5	4.0
22/05/2021	21/06/2021	1.1	0.9	2.3	2.1	4.0
Annual Average[^]		1.0	1.0	1.1	1.1	4.0

Note ¹ Units – g/m²/month Source: Walker Quarries Pty Ltd

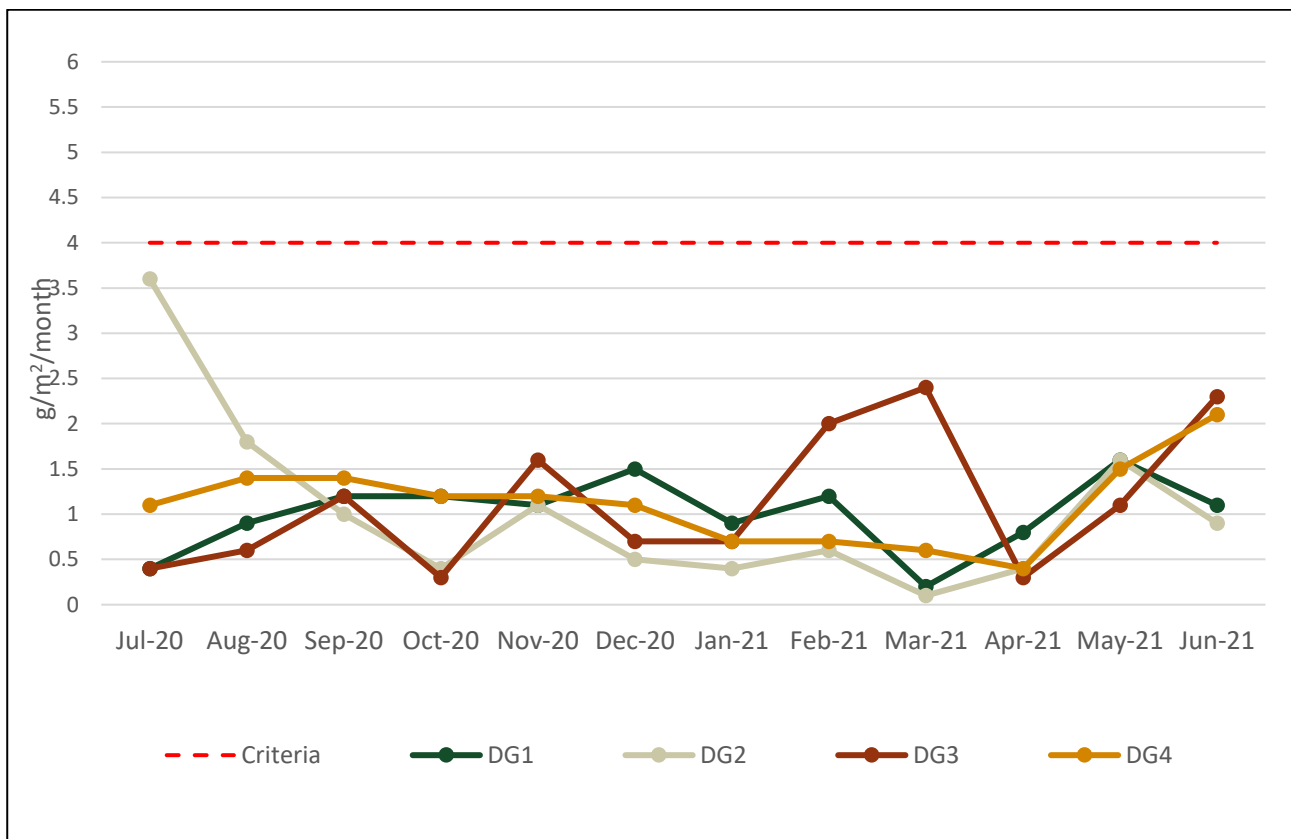


Figure 6.2 Deposited Dust 2020/21

Airborne Particulate Matter

In accordance with the AQMP, monitoring of airborne particulate matter (monitor PM_{2.5}, PM₁₀ and PM_{total}³) was commenced during the reporting period. A Dust Master Pro real-time particulate monitoring unit was installed in March 2021 to the north of the Quarry on Lot 7 DP872230 (refer to **Figure 6.1**). The location was chosen on the basis of the following.

- It is located between dust emitting operations of the Quarry Site and residential receivers most likely to be affected by the Quarry operations.
- It is located sufficient distance from remnant woodland vegetation to avoid canopy interference (in accordance with AS 2922:1987).
- It is located where electricity may be supplied by mains power (installed in February 2021).

The Dust Master Pro conforms to AS/NZS 3580.9.6:2015 Methods for sampling and analysis of ambient air (AM-18 of DEC, 2007) and has the capacity for real-time measurement of up to 5 particulate matter fractions simultaneously. Further detail on the Dust Master Pro Real-time monitoring unit, which is linked by telemetry to the server of the Quarry allowing for real-time review and decision making and monthly/annual reporting purposes is provided in **Appendix 6**.

³ PM_{total} is equivalent to TSP (an outdated term for the purpose of referencing all airborne particulate matter).

Due to calibration and technical issues, the data produced was not considered representative of quarry operations. Therefore, it is not possible to report on compliance with the airborne particulate matter criteria of *Condition 3(11)*.

6.5.3 Discussion and Analysis

All samples recorded in the reporting period were below 4g/m²/month (between 0.2 g/m²/month and 3.6 g/m²/month). Annual averages were between 1.0 g/m²/month and 1.1 g/m²/month for the four dust gauges, indicating that the deposited dust impacts as a result of the Quarry's operations are generally well below the assessment criterion.

No non-compliances with *Condition 3(14)* of DA 344-11-2001 were identified.

6.6 Biodiversity

6.6.1 Consent Conditions

Condition 3(26) requires monitoring of biodiversity to be undertaken in accordance with a *Biodiversity Management Plan*. In accordance with *Condition 3(26)* the *Biodiversity Management Plan* describes the procedures to be implemented for ensuring minimal environmental consequences for threatened species, populations and habitats, including the Purple Copper Butterfly. The *Biodiversity Management Plan* was originally approved by the DPIE on 8 April 2019, with the current version approved by the DPIE on 15 October 2020.

Condition 3(28A) identifies biodiversity credits to be retired prior to commencement of additional disturbance at the Quarry. **Table 6.10** presents the credit obligation of DA 344-11-2001 identifying both the original disturbance stages assessed by the BDAR (Ecoplanning, 2019) and consolidated Tranches nominated by *Condition 3(28A)*.

Table 6.10 Biodiversity Credit Obligations

Tranche ¹	Stage ²	Vegetation (PCT)	Area (ha)	Credit Requirement		Status
				PCT 1093	PCT 732	
1	1	PCT 1093	1.15	39		Retired
	3	PCT 1093	1.75	61		Yet to be Triggered
		PCT 732	0.92		36	Yet to be Triggered
2	2A	PCT 1093	0.15	5		Yet to be Triggered
		PCT 732	0.25		10	Yet to be Triggered
	2B	PCT 1093	0.63	20		Yet to be Triggered
		PCT 732	2.42		93	Yet to be Triggered
	4	PCT 1093	1.2	39		Yet to be Triggered
3	5	PCT 1093	1.61	52		Yet to be Triggered
		PCT 732	1.95		75	Yet to be Triggered
4	6	PCT 1093	1.76	57		Yet to be Triggered
Total			14.05	273	214	

Note ¹ As identified by Table 5A of DA 344-11-2001

² As nominated by BDAR (Ecoplanning, 2019)

Appendix 7 provides confirmation of payment into the Biodiversity Conservation Fund to retire the 39 credits for PCT 1093 for Stage 1.

6.6.2 Measured Performance

Annual Biodiversity Monitoring

Biodiversity monitoring for the period was undertaken by Ecoplanning Pty Ltd (Ecoplanning). The monitoring included a local fauna survey, conducted on 29 and 30 October 2020, and flora data gathering on 16 November 2020.

This period was the first to require the floristic data be collected in-line with the requirements of DPIE's *Biodiversity Assessment Method* (BAM). Previously the flora data gathering / surveys involved six 10 m x 10 m vegetation monitoring plots (established in September 2016) , as shown in **Figure 6.1**. As the BAM requires grids of 20m x 20m, new grids were created by overlapping the existing plots, with additional 50m transects extending off these plots. The resulting report (Ecoplanning, 2021) is presented as **Appendix 4**. As part of the BAM, vegetation integrity scores (VIS) were calculated for each plot, with the results shown in **Table 6.11**.

Table 6.11 Vegetation Integrity Score for Floristic Monitoring Plots

Monitoring plot (previous identifier)	PCT	Composition Score	Structure Score	Function Score	Vegetation Integrity Score
BAM01 (WALLQ1)	732	98	99.4	70.5	88.2
BAM02 (WALLQ2)	732	81.5	88.8	64.3	77.5
BAM03 (WALLQ3)	732	94.6	89.5	63.2	81.2
BAM04 (WALLQ4)	1093	86.9	44.2	61.6	61.8
BAM04 (WALLQ5)	1093	84.1	75.2	63.3	73.7
BAM06 (WALLQ6)	1093	83.1	77.2	59.8	72.7

The results indicate VIS scores were relatively high due to the relatively intact nature of the retained vegetation surrounding the Quarry. Generally high composition and structure scores, reflecting high species richness and foliage cover of the vegetation within the monitoring plots was also recorded. One exception (BAM04) recorded a low structure score due to low canopy cover. Vegetation function scores indicate moderately intact vegetation although with some habitat features absent or reduced. The cover of weed species in the monitoring plots including the presence of high-threat exotic species, including *Pinus radiata* (Radiata Pine) and *Rubus fruticosus* (Blackberry) was generally low (<5 %).

These scores indicate generally that retained vegetation isn't impacted by ongoing operations at the Quarry.

Given the change in monitoring method, Ecoplanning (2021) identified that it is difficult to provide direct comparison to the 2020 data but identified that native and exotic species richness increased compared to the previous season. This was primarily attributed to the increased area of the monitoring plots.

No flora species listed in the NSW *Biodiversity Conservation Act 1995* (BC Act) or Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) were detected. Based on the results of BAM plot monitoring, the Quarry is not impacting on woodland within the monitoring sites and therefore native species richness is not being impacted.

Fauna species observed or heard during the field survey included two native mammals, the skull of a feral pig, and 17 birds. No threatened fauna species listed under the BC Act were observed during the survey and Ecoplanning (2020)⁴ confirmed that habitat for native fauna species continues to be available at the Quarry.

Purple Copper Butterfly

Monitoring surveys for the Purple Copper Butterfly were undertaken on 29 and 30 October 2019 at five Blackthorn (*Bursaria spinosa* subsp. *lasiophylla*) monitoring sites, in accordance with the BMP (**Figure 6.1**). Monitoring was also undertaken at the control site at Cheetham Flats TSR, Hampton Road, Rydal, consistent with the 2018 surveys. The Coxs River, Wallerawang control site and the Eusdale Road, Yetholme control site were not surveyed.

A report of the investigation is included in the Biodiversity Monitoring Report (Ecoplanning, 2021) in **Appendix 8**, and the results are summarised as follows.

- No Purple Copper Butterflies were observed within any of the monitoring sites.
- No *Anonychomyrma itinerans* ants were present within any of the monitoring sites.
- Species of butterfly, ants and other insects were present within the Quarry Site.
- All of the monitoring sites within the Quarry included healthy populations of Blackthorn with mature fruiting individuals and seedlings present. All sites exhibited no obvious grazing of the Blackthorn leaves.
- These monitoring results are consistent with monitoring results from 2016-2019. Based on these results, it is likely that the population(s) of Purple Copper Butterfly that once existed in the Quarry has become locally extinct.

Weeds/Exotic Species

Ecoplanning (2021) found that exotic species richness has remained relatively stable between 2016 and 2020. No new exotic species were recorded in 2020. Predominant weed and exotic species within the quarry were Blackberry (*Rubus ulmifolius*), St Johns Wort (*Hypericum perforatum*) and Radiata Pines (*Pinus radiata*). Ecoplanning (2021) recommended that these species be targeted as part of weed control works within the Quarry.

Weed spraying was undertaken at the Quarry during the reporting period. The location of weed spraying, which targeted Blackberry, St Johns Wort and Siften Bush, is identified on **Figure 6.1**.

Pre-Clearance Surveys

No pre-clearance surveys were completed during the reporting period.

Rehabilitation

No significant rehabilitation had been undertaken at the Quarry Site at the time of the field survey to allow monitoring of rehabilitation to commence.

⁴ Varied Sittellas (*Daphoenositta chrysoptera*) and Scarlet Robins (*Petroica boodang*), both listed as Vulnerable under the BC Act, were detected during the 2016 survey, but were not observed or heard during the 2020 survey.

6.6.3 Discussion and Analysis

The flora and fauna monitoring undertaken in accordance with the *Biodiversity Management Plan* has identified no evidence that the Quarry is having any detrimental effect on the biodiversity of the Quarry Site and surrounds.

6.7 Heritage

6.7.1 Consent Conditions

Condition 3(21) of DA 344-11-2001 requires that Walker Quarries not cause any direct or indirect impact on any identified heritage item located outside the approved disturbance area, beyond those predicted in the EIS. An archaeological survey of the Quarry Site undertaken in 1999 identified a single Aboriginal site containing 22 artefacts (**Figure 2.2**). A subsequent *Aboriginal Cultural Heritage Assessment Report (ACHAR)* prepared to support the application for DA 344-11-2001-MOD 3 (OzArk, 2019) confirmed this site and assessed the disturbance of it by salvage and relocation of artefacts. Disturbance of this site is approved subject to the preparation of an *Aboriginal Cultural Heritage Management Plan (ACHMP)* prepared, in consultation with the *Biodiversity Conservation Division (BCD)* (function now with NSW Heritage) and the Registered Aboriginal Parties (RAPs) of DA 344-11-2001-MOD 3, and in accordance with *Condition 3(23C)* of DA 344-11-2001-MOD 3.

In accordance with *Condition 3(22)* of DA 344-11-2001, if suspected human remains are discovered on site, Walker Quarries must stop work in the area surrounding the remains, secure the area and immediately notify NSW Police and the within the NSW DPIE. Work must not recommence in the area until authorised by NSW Police and the BCD.

Conditions 3 (23, 23A and 23B) of DA 344-11-2001 relate to the discovery of previously unknown Aboriginal objects or Aboriginal Places on site. These conditions require Walker Quarries to:

- Stop all work in the immediate vicinity of the object or place immediately
- Cordon off a 10-metre buffer area around the object or place
- Contact BCD immediately,
- Only recommence work in the immediate vicinity if:
 - The object or place is confirmed not to be an Aboriginal object or place
 - The Aboriginal Cultural Heritage Management Plan (ACHMP) required by Condition 23C is revised to include the Aboriginal object or place and appropriate measures in respect of it, or
 - The Planning Secretary is satisfied as to the measures to be implemented in respect of the Aboriginal object or place and makes a written direction in that regard, and
- Record the Aboriginal object or place in the AHIMS Register.

6.7.2 Aboriginal and Historic Cultural Heritage Management

An *Aboriginal and Historic Cultural Heritage Assessment* (AHCHAR) was completed by OzArk Environmental and Heritage Management Pty Ltd (OzArk) to support the application to modify DA 344-11-2001 (MOD 3) (OzArk, 2019). No new Aboriginal sites were identified during the survey works, however, one known site (AHIMS Site #45-1-2802) was identified as to be directly impacted by the works approved by DA 344-11-2001. An ACHMP (OzArk, 2020) was subsequently prepared in consultation with the RAPs and BCD and approved by DPIE during the reporting period (August 2020) for the purpose of managing impact on AHIMS Site #45-1-2802 and heritage generally. The ACHMP includes the agreed survey and salvage of AHIMS Site #45-1-2802.

Following this, salvage of the artefacts contained within the impacted site (AHIMS Site #45-1-2802) was undertaken on 20 January 2021 in accordance with the ACHMP. Surface collection and excavation took place with a total of 22 artefacts (predominantly unmodified quartz flakes) collected during the surface collection and two artefacts (both quartz flakes) were recovered from the six 50x 50 cm pits excavated. A copy of the *Aboriginal Site Impact Recording Form*, salvage report and new Aboriginal Site Recording Form is provided as **Appendix 9**.

Disturbance of this area commence in July 2021 and will be discussed in the next reporting period.

6.8 Traffic and Transport

Transportation activities during the reporting period occurred during the approved hours of operation (**Section 2.3.2**).

The number of laden trucks leaving the Quarry were reported as required during the reporting period (refer to **Section 4.3.4** for numbers).

6.9 Visual/Landscape Management

Operations with the potential to adversely impact visual amenity during the reporting period include the development of the Extraction Area and stockpiling of extracted material and products.

Walker Quarries maintained a visual amenity bund located to the north of the Western Stockpile Area during the reporting period to minimise visual amenity impacts associated with its operations, as shown in **Figure 4.1**. The establishment of vegetation on this bund wall continued during the reporting period and eventually views of the Quarry Site will be largely obscured from east bound traffic on the Great Western Highway. As the Extraction Area is developed below the current floor level of 945 m AHD, the visibility of these activities will reduce as natural screens formed by the retained hill slope and vegetation take effect.

During the reporting period, development of the extraction area progressed towards the northern and eastern limit of the Quarry. As a result, limited views of these activities were afforded at vantage points on Rocky Waterhole Drive and Barton Avenue to the northeast.

6.10 Waste Management

Waste generation during the reporting period was negligible, with general waste placed within skip bins that are serviced monthly by a licenced waste contractor. Liquid wastes, principally waste hydrocarbons generated during equipment servicing, are removed by a licenced oil waste contractor when their storage container reaches capacity. As a consequence of the limitations to on-site disposal, all wastewater generated via the effluent and ablutions system is collected and disposed of off-site by a licenced contractor.

6.11 Emergency and Hazards

Diesel delivered to the Quarry Site was delivered in bulk by a diesel supplier and stored in a self-bunded diesel tank. Refuelling of equipment was undertaken either within a secured, sealed and bunded area where any spillage or leakage can be contained, or by a mobile fuel truck away from natural or artificial drainage lines. The mobile fuel truck, as well as the plant or vehicle being refuelled, maintain hydrocarbon spill kits for use in the event of leakage or spillage. No significant hydrocarbon spills occurred during the reporting period. Oils and lubricants are stored under shelter on a catchment pallet where spillage or leakage can be contained.

As identified in the IEA, Waste oil drums and other containers were found to be stored outside of bunded pallets during the audit site inspection. On inspection on 10 August 2021, all drums and containers were confirmed as having been placed on bunded surfaces as recommended by the IEA and reported in an IEA Action Plan supplied to the DPIE on 20 July 2021. It is noted that further improvements to the management of hydrocarbons are under review and should be implemented during the next reporting period (refer to **Section 12.0**).

Explosives used during the reporting period were transported to Site by the blasting contractor on the day of the blast.

No significant safety hazards occurred during the reporting period.

6.12 Bushfire

Management of bushfire hazards is provided through the *Bushfire Management Plan (BMP)*. The plan outlines procedures to be implemented in the event of a bushfire within or surrounding the Site.

During the reporting period, Walker Quarries maintained fire extinguishers at the Fuel and Lube Bay, within the offices and workshops, and on all earthmoving machinery, mobile plant and light vehicles. In addition, Walker Quarries maintains a water truck with fire-fighting capability within the Quarry.

No fires occurred within the Site during the reporting period.

7.0 Water Management

7.1 Water Use

Water is required at the Quarry for three principal purposes:

1. Dust suppression of active and exposed areas, e.g. internal roads, hardstand surface and stockpile areas.
2. Dust suppression of crushing operations.
3. Sand and cobble washing.

The following provides information on the anticipated water use for each of these activities.

Dust Suppression – General

Exposed and trafficked areas of the Quarry Site are watered using a 14 kL water truck to reduce the potential for wind or wheel generated dust. The volume of water used for this purpose varies significantly from day to day and month to month based on seasonal and meteorological conditions.

The following provides an indication of water use under various meteorological conditions:

- rainfall conditions: no applications
- temperature $\leq 15^{\circ}$: 1 to 2 applications
- temperature $> 15^{\circ} \leq 25^{\circ}$: 2 to 3 applications
- temperature $> 25^{\circ} \leq 30^{\circ}$: 3 to 4 applications
- temperature $> 30^{\circ}$: 5 to 6 applications.

An estimated 5 to 6 ML of water was estimated to be used for general dust suppression during the reporting period. This is less than forecast by Umwelt (2019), however reflects a lower than anticipated production level.

Dust Suppression - Crushing

Based on historic dust suppression rates to the road base and aggregate crushing trains, the Applicant applies water at the following rates:

- 20 L/t of crushed aggregate
- 7 L/t of crushed road base
- < 2 L/t of select fill.

Based on the production of 121,475 t of crushed aggregates, 4,630 t of crushed road base and 41,000 t of select fill, an estimated 2.5 ML of water was used for crushing during the reporting period.

Sand Washing

An estimated 1ML of water is used per day (8 hours) to wash 500 t of sand. This equates to approximately 2,000 L/t of sand washed. Of the water added, approximately 15 % is lost on average to evaporation from silt cells and within the silts removed from the silt cells. Based on the production of 50,620 t of sand during the reporting period, approximately 101 ML of water was processed through the washing plant with an estimated 15.2 ML lost by evaporation, seepage and in the sold product.

In total, approximately 23.7 ML of water was used at the Quarry. No water was required to be purchased during this time and three discharge events from the licensed discharge points (refer to **Section 7.2.2**).

7.2 Surface Water

7.2.1 Predicted Impacts and Performance Criteria

The *Soil and Water Management Plan* (SWMP) indicates that surface water monitoring will be undertaken monthly during discharge at two locations, SD1 and SD2 (**Figure 6.1**). A site water balance prepared for the Quarry (Umwelt, 2019) predicts discharges from the licensed Quarry discharge points under average (50th percentile) to high (90th percentile) rainfall conditions. As the area of disturbance of the Quarry increases, and the volume of runoff collected increases, the predicted number and volume of discharges will increase. Based on the design and operation of sediment basins on the Quarry Site in accordance with an approved Erosion and Sediment Control Plan (ESCP), occasional discharges from the Quarry sediment basins may also occur (up to 4 per year) under high rainfall conditions (events where rainfall exceeds the 5-day 95th percentile conditions, i.e. >56mm over 5 days).

EPL 13172 specifies the water quality criteria that apply to water discharged from the Quarry, which are presented in **Table 7.1**. The limits presented do not authorise the pollution of waters by any other pollutants and the Quarry must comply with Section 120 of the *Protection of the Environment Operations Act 1997* (POEO Act).

Table 7.1 Surface Water Monitoring Criteria

Pollutant	Unit of Measure	Criteria
TSS	mg/L	30
Sulphate	mg/L	250
Grease and Oil	mg/L	10
pH	pH unit	6.5-8.5

To meet the environmental management and monitoring commitments of the Quarry's environmental management plans, surface water monitoring at the Coxs River is required to be undertaken annually at sites SD3 (Cox's Control) and SD4 (Cox's Receiving) (**Figure 6.1**). This monitoring was increased from annual monitoring to monthly monitoring in February 2020 to allow for the establishment of site-specific water quality objectives.

7.2.2 Measured Performance

There were three surface water discharges during the reporting period, from SD1 in July 2020, and from SD1 and SB2 in March 2021. Monitoring results for these discharges are provided in **Table 7.2**.

Monthly monitoring of Coxs River sites SD3 and SD4 was undertaken from February 2020. Results of this monitoring are provided in **Table 7.3**.

Table 7.2 Surface Water Monitoring Results – Discharge Monitoring

Site	Sample Date	TSS (mg/L)	EC (μ S/cm)	Sulphate (mg/L)	Grease and Oil (mg/L)	pH
SD1	29 July 2020	20	59	5	9	6.3
SD1	25 March 2021	180	2	2	-	6.5
SB2	25 March 2021	290	5	5	-	6.5

Source: Walker Quarries

Table 7.3 Surface Water Monitoring Results – Monthly Monitoring

Period	TSS (mg/L)	EC (μ S/cm)	Sulphate (mg/L)	Grease and Oil (mg/L)	pH
SD3					
July 2020	<5	860	230	<5	8.3
August 2020	<5	600	150	-	8
September 2020	<10	460	110	<5	8.4
October 2020	<10	630	140	<5	7.9
November 2020	58	630	160	0	8.1
December 2020	<5	680	150	-	7.8
January 2021	<10	700	200	-	7.8
February 2021	<10	760	220	-	8
March 2021	<5	740	200	-	7.9
April 2021	<10	540	150	-	7.6
May 2021	<10	590	190	-	7.9
June 2021	<10	590	190	-	7.9
Average	<10	629	169	<5	7.9
SD4					
July 2020	10	590	140	<5	8.1
August 2020	<5	440	100	-	8.1
September 2020	<10	460	110	<5	8.4
October 2020	<10	490	110	<5	8.2
November 2020	<5	480	120	0	8.4
December 2020	<5	520	110	-	7.8
January 2021	<10	480	120	-	7.6
February 2021	<10	500	130	-	8
March 2021	22	570	150	-	7.7
April 2021	<10	380	96	-	7.7
May 2021	<10	420	130	-	8.1
June 2021	<10	420	130	-	8.1
Average	<10	469	119	0.0	8.0

Source: Walker Quarries/EnviroLab Services Pty Ltd

Approximately quarterly monitoring of Coxs River sites SD3 and SD4 for metals commenced in July 2020. This was commenced to establish baseline levels within the Coxs River and future establishment of Site Specific Performance Criteria should future modifications of the development consent allow for extraction below the groundwater table and dewatering. Results of this monitoring are provided in **Table 7.4**.

Table 7.4 Surface Water Monitoring Results – Quarterly Metals Monitoring

Sample Date	As	Ca	Cr	Cu	Pb	Hg	Ni	Zn
SD3								
30 July 2020	<0.05	<0.01	<0.01	<0.01	<0.03	<0.0005	<0.02	<0.02
29 September 2020	<0.05	<0.01	<0.01	<0.01	<0.03	<0.0005	<0.02	<0.02
29 October 2020	<0.05	<0.01	<0.01	<0.01	<0.03	<0.0005	<0.02	<0.02
Average	<0.05	<0.01	<0.01	<0.01	<0.03	<0.0005	<0.02	<0.02
SD4								
30 July 2020	<0.05	<0.01	<0.01	<0.01	<0.03	<0.0005	<0.02	<0.02
29 September 2020	<0.05	<0.01	<0.01	<0.01	<0.03	<0.0005	<0.02	<0.02
29 October 2020	<0.05	<0.01	<0.01	<0.01	<0.03	<0.0005	<0.02	<0.02
Average	<0.05	<0.01	<0.01	<0.01	<0.03	<0.0005	<0.02	<0.02

7.2.3 Discussion and Analysis

7.2.3.1 Monitoring Results

Results from discharge monitoring undertaken at SD1 on 29 July 2020 indicate water quality was within the limits specified in EPL 13172 for all parameters. Results from 25 March 2021 showed an exceedance of *Total Suspended Solids* (TSS) criteria at both SD1 and SB2, with no other exceedances identified. It is to be noted that the rainfall event in the 5 consecutive days prior to 25 March 2021 exceeded 56 millimetres (mm) of rainfall, therefore the exceeded criteria is deemed not to apply under condition L2.5(a) of EPL 13172.

Monthly monitoring of water quality in Cox's River has been undertaken from February 2020, at sites SD3 and SD4. Results from this monitoring indicate the water in Cox's River is generally more alkaline than water discharged from site, with recorded pH values of 7.8 to 8.4 at SD3 and 7.7 to 8.4 at SD4. These results are significantly higher than the pH recorded during discharge monitoring at SD1 in July 2020 and March 2021. The recorded pH was within the ANZECC guideline for pH (6.5 - 8.5) at both SD3 and SD4 during the reporting period.

Electrical conductivity results also indicate that the water in Cox's River is more saline than the discharge water, with EC ranging from 600 – 1100 $\mu\text{S}/\text{cm}$ at SD3 and 340 – 1000 $\mu\text{S}/\text{cm}$ at SD4 (compared to 62 $\mu\text{S}/\text{cm}$ recorded at SB2 during the March 2021 discharge event).

Sulphate concentrations were also higher in Cox's River, with results ranging from 110 – 230 mg/L at SD3 and 96 – 190 mg/L at SD4 (compared to 5mg/L recorded at SB2 during the March 2021 discharge event).

Monitoring results were generally consistent at both Cox's River sites throughout the reporting period. The pH values were generally similar, electrical conductivity and sulphate concentrations were generally higher at SD3 compared to SD4. SD3 is located in closer proximity to the Lithgow coal mines and power stations which typically have discharged water with higher sulphate and EC concentrations. The higher levels recorded at SD3 may be influenced from increased runoff from such sites or increased release from lake Wallace (which collects much of the runoff from these sites) during these months.

The results of the metals monitoring do not at this stage provide any significant guidance on local baseline levels although it is noted that they are generally similar (between SD3 and SD4) each time, with concentrations below the limit of reporting in all samples analysed to date.

It is to be noted that the results at SD4 did not increase during the discharge event during June 2021 from the May 2021 period. This would indicate the discharge event had no impact on water quality in the Coxs River.

7.2.3.2 Water Management System/Erosion and Sediment Control

The dams, sediment basins, catchment drains and other erosion and sediment control structures of the Quarry Site were observed to be generally well maintained and managed in accordance with the Quarry *Soil and Water Management Plan (SWMP)*.

During the inspection of 10 August 2021, it was confirmed that the flow of dirty water is in accordance with the SWMP. An exception being that bunding constructed around the Eastern Stockpile Area now prevents any discharge of runoff with Sediments Basins 7a and 7b now redundant. This modification to the surface water management system was discussed with Walker Quarries and confirmed as appropriate given the limited run-on/runoff to and from the Eastern Stockpile Area. This modification to the surface water management system reduces the pollution risk of the Quarry Site as the smaller sediment basins no longer require maintenance to remove accumulated water. The Quarry Water Management Plan is to be updated within 6 weeks of this Annual Review to confirm this modification to water management.

The Clean Water Drainage Line which takes water from the Great Western Highway and transfers this to a tributary of the Coxs River to the south showed no signs of pollution and retained excellent vegetation growth. Quarry management confirmed that sediment dams and silt cells are regularly excavated of consolidated silt which is transferred to drying cells and eventual use in rehabilitation.

The generally good practice notwithstanding, the capacity of SB5, located to the west of the Quarry office, appears to remain below that required to effectively store and settle runoff from the respective. A recommendation to increase the capacity requirements for this catchment contained in the 2020 Annual Review is repeated. It is noted that works on these sediment basins was postponed in 2020-2021 during the review of the SWMP and ESCP by DPIE (which were approved in June 2021).

7.3 Groundwater

7.3.1 Predicted Impacts and Performance Criteria

A *Groundwater Impact Assessment* was undertaken by Jacobs Pty Ltd to support the application for DA 344-11-2001-MOD 3 (Jacobs 2019). This assessment assumed extraction to an elevation of 860 mAHD and predicted impacts to surrounding bores, groundwater dependent ecosystems and the Coxs River to be minor. Extraction below the groundwater table has not been approved by DA 344-11-2001-MOD 3 and as a result no impact on local groundwater levels, bores or ecosystems is likely.

There are no prescribed groundwater monitoring criteria in DA 344-11-2001 or EPL 13172. Rather, the elevation of the local water table is to be monitored to prevent unanticipated intersection by extraction operations at the Quarry, which is considered unlikely above an elevation of 900 m AHD.

7.3.2 Measured Performance

No groundwater was encountered within the extraction and the elevation of the extraction area remained above 945 m AHD.

To meet the environmental management and monitoring commitments of the Quarry’s environmental management plans, groundwater monitoring at three bores continued during the reporting period (Figure 6.1). Continuous monitoring of these bores is undertaken by down-hole data loggers which monitor groundwater levels at a 6-hourly frequency. Monitoring commenced on 22 June 2018 at GW1, 12 July 2018 at GW2, and 3 August 2018 at GW3. The data loggers are owned by the Quarry and downloaded quarterly.

The data period covered by this report extends from 1 July 2020 to 30 June 2021. Groundwater levels (and changes in groundwater level) are summarised in Table 7.5 and shown in Figure 7.1.

Table 7.5 Summarised Quarry Groundwater Monitoring Bore Groundwater Level Data

Bore ID	Data logger groundwater level – commencement of monitoring ¹ (m AHD)	Data logger groundwater level – commencement of reporting period (m AHD)	Data logger groundwater level – end of reporting period (m AHD)	Change in groundwater level during reporting period (m)	Change in groundwater level since commencement of monitoring (m)
GW1	874.33	872.97	873.42 ²	0.45	-0.91
GW2	899.75	899.09	899.775	0.685	0.025
GW3	895.01	891.51	894.12	2.61	-0.89

Note ¹ Stabilised data start date, i.e. GW1 (1/9/2018), GW2 (20/7/2018), GW3 (5/8/2018)

² A pressure sensor error occurred during this period, with manually recorded data utilized.

Source: Walker Quarries

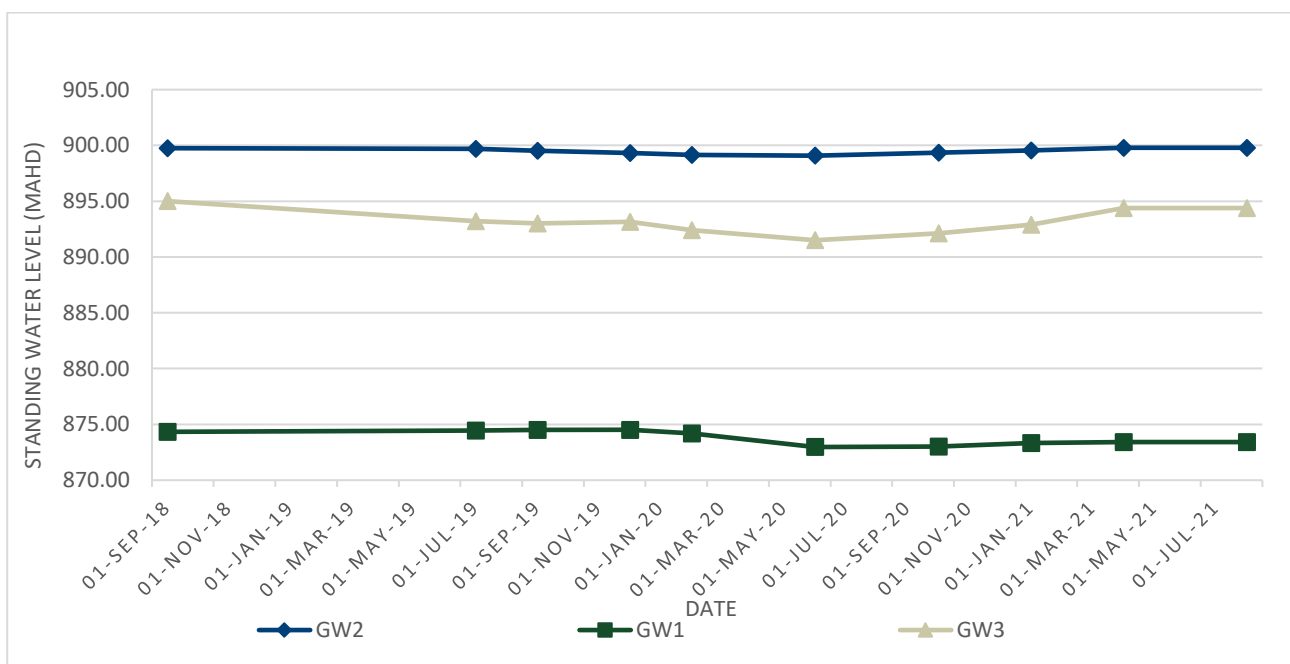


Figure 7.1 Groundwater Levels (2018 – 2021)

Samples were collected from all three groundwater bores (GW1, GW2 and GW3) on 18 November 2020 for metals analysis. Results are provided in **Table 7.6**.

Table 7.6 Summarised Quarry Groundwater Monitoring Bore Groundwater Metals Data

Bore ID	GW1	GW2	GW3	Criteria
Sample Date	18 November 2020	18 November 2020	18 November 2020	
Arsenic	0.009	0.005	<0.001	24
Nickel	0.004	0.006	0.017	11
Zinc	<0.005	0.087	0.161	8

Note: All units are µg/L

Source: Walker Quarries

7.3.3 Discussion and Analysis

As expected, groundwater was not encountered within the extraction area during the reporting period.

An analysis of the groundwater monitoring data indicates an increase in groundwater levels over the reporting period. This supports evidence reported in previous Annual Reviews which identifies a lagging relationship between rainfall and groundwater levels. During this reporting period, when above average rainfall was experienced, the monitoring identifies a recovery of groundwater levels which were gradually dropping over the previous reporting periods which occurred during or immediately followed a period of prolonged drought that saw groundwater level drop in all bores.

Limited sampling and analysis has been undertaken for metals in water samples collected from groundwater bores GW1, GW2 and GW3. Monitoring results for the samples collected in November 2020 indicate concentrations of heavy metals including arsenic, nickel and zinc are well below the ANZECC 2000 criteria (95th percentile).

8.0 Rehabilitation

8.1 Rehabilitation Performance during the Reporting Period

Limited areas of the Quarry Site were available for rehabilitation during the reporting period and as a result no additional rehabilitation was undertaken during the reporting period. Rehabilitation activities were limited to the following.

- Vegetation established on the Visual Amenity Bund, located to the north of the Western Stockpile Area was maintained.
- Natural revegetation of the batters to the south of the weighbridge (along the haul road), east of the MSA and on the batter slopes of the silt cells and storage dams continued.
- Rehabilitation areas along the Great Western Highway on either side of the Quarry entrance were maintained.

As illustrated by the panoramic photo taken from the Western Stockpile Area across the active Quarry area (refer to **Photo 8.1**), Walker Quarries has retained and promoted the re-establishment of significant vegetation throughout the Quarry Site. This promotes ground stability, filtration of runoff and future re-establishment of vegetation.



Photo 8.1 Panoramic View of the Quarry Site Identifying Retain and Re-established Vegetation

Table 8.1 provides a summary of the disturbance and rehabilitation areas (as nominated in the Quarry MOP, Umwelt, 2020).

Table 8.1 Rehabilitation Status

Mine Area Type	Previous Reporting Period (Actual) (ha)	This Reporting Period (Actual) (ha)	Next Reporting Period (Forecast) (ha)
A. Total mine footprint	18.6	19.7	21.7
B. Total active disturbance	16.0	17.1	19.1
C. Land being prepared for rehabilitation	0	0	0.3
D. Land under active rehabilitation	2.6	2.6	2.9
E. Completed rehabilitation	0	0	0

8.2 Actions for the Next Reporting Period

As all areas of disturbance will be required for Quarry operations, no major rehabilitation activities are proposed for the next reporting period.

Sections of the batter slopes of the WSA and haul road opposite the Quarry weighbridge will be monitored during the next reporting period to assess whether areas of rilling and poorly revegetated areas require further stabilisation and revegetation. **Photo 8.2** to **Photo 8.5** identify examples of the rilling and bare areas to be monitored over the next 12 months.

In the event these slopes continue to rill and not revegetate with native grass or shrub species, Walker Quarries will undertake another hydromulching campaign to promote the establishment of ground and shrub cover.



Photo 8.2 Western Stockpile Area Batter – Rilling and Exposed Ground 1



Photo 8.3 Western Stockpile Area Batter – Rilling and Exposed Ground 2



Photo 8.4 Western Stockpile Area – Exposed Ground (from distance)



Photo 8.5 Processing Pad Haul Road Batter – Exposed Ground

9.0 Community

9.1 Consultation and Community Engagement

9.1.1 Community Consultative Committee

Three meetings of the Wallerawang Quarry Community Consultative Committee (CCC) were held during the reporting period:

- 4 August 2020 (rescheduled from June 2020 due to COVID-19)
- 1 December 2020, and
- 8 June 2021.

Appendix 10 presents the minutes from the meetings. The Quarry staff present at the meeting provided information about Quarry operations, planning and compliance matters, and answered questions.

9.1.2 Other Consultation

Walker Quarries maintains an open door policy and has offered to provide local community members with ‘tours’ of the Quarry if requested. Both the Quarry Manager and Operations manager have indicated they are happy to field queries and respond to issue of concern.

9.2 Complaints

As discussed in **Section 6.3.3**, one query over noise generated by the Quarry was received from the owner of 42 Rocky Waterhole Drive. The query was made via phone call to Walker Quarries on 14 July 2020. The results of an investigation found the noise to be generated by on-site activities and enhanced by wind conditions (southerly winds).

Walker Quarries implemented the following actions to minimise the potential for impacts from quarry trucks:

- Temporarily stopping the crushing train
- Attended the resident’s property to assess audible noise, and
- Makes observations of wind conditions and plant operations to identify any noise enhancing weather conditions.

Furthermore, and as noted in **Section 6.3.3**, the residence of 42 Rocky Waterhole Drive is now included in twice yearly noise monitoring.

10.0 Independent Audit

10.1 Requirement

In accordance with the requirements of *Condition 5(13)* of DA 344-11-2001, an *Independent Environmental Audit* (IEA) of the Quarry was to be completed prior to the end of June 2021, and every three years thereafter.

10.2 Independent Environment Audit

The IEA was completed on 19 July 2021 (audit conducted during the June-July 2021 period) and covered the period 13 April 2018 to 27 April 2021. The IEA, which commenced with a site meeting on 27 April 2021, is provided as **Appendix 11**. The IEA considered the conditional requirements of:

- DA 344-11-2001: the development consent for the Wallerawang Quarry issued on 14 October 2004 and subsequently modified three times on 25 August 2017, 7 December 2018 and 26 February 2020,
- The management plans or other documents prepared in compliance with the conditions of DA 344-11-2001,
- DA 019/18: the development consent issued by Lithgow City Council for the construction and use of office and amenity buildings on the Wallerawang Quarry Site,
- Mining lease (ML) 1633,
- Exploration Licences (EL) 4473, and
- various Water Access Licences and Water Approvals held by Walker Quarries.

The IEA confirmed operations at the Wallerawang Quarry to be generally in compliance with the various conditions of approvals and commitments made in associated documents. Specifically, the IEA makes the following assessments of compliance and performance.

DA 344-11-2001

Compliance was either confirmed, or the requirement to comply not triggered, for all but the following conditions.

- Condition 2(2)(a). Relating to the fact that non-conformances against some conditions requirements were noted.
- Condition 3(3B). Relating to notification of DPIE of a noise agreement with a neighbouring landowner.
- Condition 3(4)(c). Relating to the implementation of noise management and monitoring on the Quarry Site, a period of in excess of 6 months between monitoring campaigns was recorded in contravention of the commitments of the Noise Management Plan at the time.
- Conditions 3(11) & 3(13). Relating to air monitoring criteria, it was identified that the period of deposited dust sampling fell outside the 30+/-2 days required under the relevant standard (being a commitment made in the Air Quality Management Plan).

- Condition 3(23C)(a). With reference to the preparation of an Aboriginal Cultural Heritage Management Plan, endorsement of the author (OzArk Environmental & Heritage Management) by the Department of Planning, Industry & Environment was not able to be confirmed.
- Condition 3(25). Relating to a requirement to provide appropriate long-term security for the Biodiversity Offset Strategy of the Quarry, payment into the Biodiversity Conservation Fund to account for the offsetting of biodiversity credits was made after the required date (31 December 2018).
- Condition 3(31)(c). Relating to the preparation and implementation of a Rehabilitation Management Plan, this document was submitted 3 days after the 3 month period from approval of Modification 3⁵.
- Condition 3(37). Relating to the storage of liquids on the Quarry Site, waste oil drums and other containers were identified as being stored outside of bunded pallets.
- Condition 5(5)(b)/(c). Relating to the requirement to review and update if necessary management plans and strategies of the Wallerawang Quarry, evidence could not be supplied to confirm these plans and strategies were reviewed following the 2018 IEA.
- Condition 5(8). With reference to the operation of the Community Consultative Committee (CCC) for the Quarry, minutes for one of the CCC meetings during the audit period was absent from the Wallerawang Quarry website.
- Condition 5(12). Relating to the provision of Annual Reviews to the DPE and Lithgow City Council, evidence of supply to Lithgow City Council could not be provided.
- Condition 5(17). Relating to the provision of Environmental Assessment documentation listed in Condition 2(2)(c), the environmental assessments for modifications 1 and 2 are not available on the Wallerawang Quarry website.

With respect to these non-compliances, excluding Condition 3(37), these reflect administrative non-compliances without potential for direct impact on the environment. This notwithstanding the IEA Response Plan provided as Condition 3 reviews the recommendations made in the IEA with respect to correcting or preventing these along with timing for implementation.

ML 1633

The IEA confirms Walker Quarries as compliant against the 9 conditions of ML 1633.

EL 4473

The IEA confirms Walker Quarries as compliant against the 14 conditions of EL4473.

Water Access Licences and Approvals

The IEA confirms Walker Quarries as complying with all triggered conditions of:

- WAL41884
- WAL42390
- Approval 10CA123996, and
- Approval 10CA123169.

⁵ It is noted in the IEA that a request for a small extension to the time to submit was requested but rejected by the DPIE.

10.3 Action Plan

An Audit Action Plan has been prepared in response to the IEA and was submitted to the DPIE on 20 July 2021 (concurrently with the IEA). A copy of the IEA Action Plan is included as **Appendix 12. Table 10.1** provides a report on the status of the proposed response actions to the recommendations of the IEA.

Table 10.1 Status of IEA Action Plan Commitments

Condition	Environmental Parameter	IEA Recommendation(s)	Response	Timing for Implementation	Status
3(3B)	Noise Agreement	It is recommended that WQ formally notify DPIE that a noise agreement is in place with the owner of property ID 'N2'.	Accepted. It is noted N2 is not a residence and, subject to endorsement of a revised Noise Management Plan, the location of noise monitoring location N2 will be relocated to 42 Rocky Waterhole Drive as a more appropriate noise monitoring location	30 September 2021	Complete
3(4)(c)	Noise Monitoring	Undertake noise monitoring bi-annually in accordance with the approved Noise Management Plan.	The Noise Management Plan was updated in September 2020 to remove reference to 6 monthly interval. Monitoring is now undertaken bi-annually (nominally September/October and March/April).	Complete and ongoing	Complete
3(11)	Air Quality Management	Ensure that dust sampling is undertaken within 30+/-2 day period required under the relevant standard.	Walker Quarries retains an Environmental Permit Planner which identifies required dates for monitoring and sampling.	Complete and ongoing	Complete
3(13)					
3(23C)(a)	Aboriginal Cultural Heritage Management Plan (ACHMP)	It is recommended that WQ seek formal DPIE endorsement of OzArk (or other suitably qualified person(s)) at the next revision of the ACHMP.	Endorsement will be sought prior to the next review of the ACHMP.	October 2021	Commenced
3(25)	Security of Biodiversity Offsets	It is recommended that WQ seek DPIE approval of the long-term offset security payments made to the Biodiversity Conservation Fund in 2018.	Secretary endorsement of the Biodiversity Management Plan (which provides the mechanism for offsetting disturbance) is considered to supersede this requirement. The condition references a superseded offset policy.	N/A	N/A
3(37)	Liquid Storage	Put additional containment/storage measures in place to ensure that containers holding hydrocarbons and oils are appropriately stored when not in active use, in accordance with AS1940.	WQ will review storage of hydrocarbons and provide for self-bunded pallets or other compliant containment areas.	October 2021	Complete

Condition	Environmental Parameter	IEA Recommendation(s)	Response	Timing for Implementation	Status
5(5)(b)/(c)	Management Plan Review	Consider adding a column providing the purpose of review/update to management plan document control tables to address this condition.	Walker Quarries does not intend on implementing this recommendation.	N/A	N/A
		Provide notification to DPIE on submission of each Annual Review that confirms any management plans scheduled to be revised.	Walker Quarries agrees to implement this recommendation	30 September 2021	Complete
5(8)	CCC	Upload CCC meeting minutes to the Company website following their distribution to CCC representatives.	Walker Quarries agrees to implement this recommendation	Within 10 days of CCC meeting	Ongoing
5(12)	Annual Review Distribution	Ensure that copies of WQ AR documents continue to be provided to LCC.	Lithgow Council was provided with a copy of the 2019/2020 Annual Review, along with a link to the location of previously Annual Reviews, in an email from Alex Irwin on 4 May 2021. Future Annual Reviews will be emailed to Lithgow City Council within 1 month of submission to the DPIE.	Complete and ongoing	Ongoing
5(17)	Website Content	Update the link to the current DPIE major projects database from the WQ website for access to DA 344-11-2001 approvals documentation.	Agreed	30 September 2021	Complete

11.0 Incidents and Non-Compliances during the Reporting Period

11.1 Incidents

There were no Incidents recorded during the reporting period.

11.2 Warnings, Notices and Additional Regulatory Authority Advice

No warnings or notices were issued by the Department of Planning, Industry and Environment (DPIE) during the reporting period.

11.3 Non-Compliant Conditions

Please refer to **Table 1.2** in **Section 1.0**, and **Table 10.1** in **Section 10.2**, which summarise the Quarry's non-compliances with conditions of DA 344-11-2001, ML 1633, EL 4473 and water licences and approvals during the reporting period. It is noted that no additional non-compliances against the conditions of these consents, leases, licences and approvals to those identified in the IEA were identified.

In summary, during the reporting period (noting that some of the non-compliances identified by the IEA preceded the reporting period) the following non-compliances are reported.

- DA 344-11-2001 Condition 2(2(a)): The condition states that the development may only be carried out in compliance with the conditions of this consent.
- DA 344-11-2001 Condition 3(3B): The condition states that the noise criteria does not apply if the Applicant has an agreement with the owner/s of the relevant residence or land to exceed the noise criteria, and the Applicant has advised the Department in writing of the terms of this agreement.
- DA 344-11-2001 Condition 3(23C/a): The condition requires the Applicant to prepare an Aboriginal Cultural Heritage Management Plan (ACHMP) for the development to the satisfaction of the Secretary. The ACHMP must be prepared by suitably qualified and experienced person/s whose appointment has been endorsed by the Secretary.
- DA 344-11-2001 Condition 3(25): The condition requires by 31 December 2018, unless otherwise agreed with the Secretary, the Applicant must make suitable arrangements to provide appropriate long-term security for the Biodiversity Offset Strategy, to the satisfaction of the Secretary. Any mechanism must remain in force in perpetuity.
- DA 344-11-2001 Condition 3(37): The Applicant must ensure that all tanks and similar storage facilities (other than for water) are protected by appropriate bunding or other containment, in accordance with the relevant Australian Standards.
- DA 344-11-2001 Condition 5(5 b/c): This condition requires that within three months of the submission of an:(b) incident report under condition 9; and (c) audit report under condition 14. The Quarry must review the strategies, plans and programs required under this consent, and notify DPIE of any review being undertaken. Where this review leads to revisions in any such document, then within 6 weeks of the review the revised document must be submitted for the approval of the Secretary.

- DA 344-11-2001 Condition 5(17): This condition relates to the provision of Environmental Assessment documentation listed in Condition 2(2)(c), the environmental assessments for modifications 1 and 2 be available on Wallerawang Quarry website.

The conditions of EPL 13172 have also been reviewed. Compliance with the conditions of EPL have been confirmed noting that during the reporting period, monitoring of sigma theta as required by Condition M4.1 commenced.

11.4 General Compliance

Excluding non-compliance with *Condition 3(37)*, which was subsequently addressed during the reporting period, the non-compliances identified during the reporting period reflect administrative non-compliances without potential for direct impact on the environment.

It is considered that during the reporting period, the improvements to overall environmental performance and adherence to administrative environmental requirements observed during the last reporting period have been maintained.

All environmental monitoring has been undertaken with results confirming compliance with relevant criteria and generally good environmental performance.

Continued excellent environmental performance is expected over the course of the next reporting period.

12.0 Activities to be Completed in the Next Reporting Period

Key activities to be completed during the next reporting period are summarised as follows.

- The following management plans will be updated:
 - Environmental Management Strategy
 - Noise Management Plan
 - Blast Management and Explosives Control Plan
 - Air Quality Management Plan
 - Biodiversity Management Plan
 - Soil and Water Management Plan
 - Bushfire Management Plan
 - Aboriginal Cultural Heritage Management Plan
- An environmental management commitment checklist will be completed and implemented. The checklist will be referenced at least twice annually by independent inspection of the Quarry Site.
- The hydrocarbon storage area will be upgraded to reduce the potential for contamination and/or pollution.
- The groundwater monitoring pressure sensor of GW1 will be repaired or replaced.
- Mobile crushing operations within the extraction area will be relocated to a lower elevation.
- The capacity of SB5 will be increased in accordance with an updated water management system to be documented in an updated version of the Soil and Water Management Plan.
- Noise monitoring locations will be officially updated (by way of an update to the Noise Management Plan) to replace N2 with N4.
- Rilling and revegetation of batter slopes across the Quarry Site will be monitored and a plan for re-stabilisation and revegetation of slopes prepared prior to the completion of the next Annual Review.
- Quarry operations will continue generally as completed during the reporting period and in accordance with the Quarry MOP. Should any deviations from this be required, these will only be undertaken subject to approval by the DPIE and (if required) approval of an updated MOP.

13.0 References

Ecoplanning Pty Ltd (Ecoplanning) (2021). *Biodiversity Monitoring 2020 Walker Quarry, Wallerawang, NSW*. Prepared for: Walker Quarries Pty Limited, 18 February 2021 Version: Final.

Jacobs Australia Pty Limited (Jacobs) (2019). *Wallerawang Quarry – Groundwater Impact Assessment. Wallerawang Quarry Extension*. Prepared for Walker Quarries, 2 July 2019 Version 001: Final

Muller Acoustic Consulting Pty Ltd (MAC) (2019). *Noise and Vibration Impact Assessment, Wallerawang Quarry, Wallerawang NSW*. Prepared for Umwelt (Australia) Pty Ltd, May 2019 Version: Final.

Muller Acoustic Consulting Pty Ltd (MAC) (2020). *Noise Monitoring Assessment Wallerawang Quarry, September 2020*. Prepared for Walker Quarries, 17 September 2020 Version: Final

Muller Acoustic Consulting Pty Ltd (MAC) (2021). *Noise Monitoring Assessment Wallerawang Quarry, March 2021*. Prepared for Walker Quarries, 23 April 2021 Version: Final

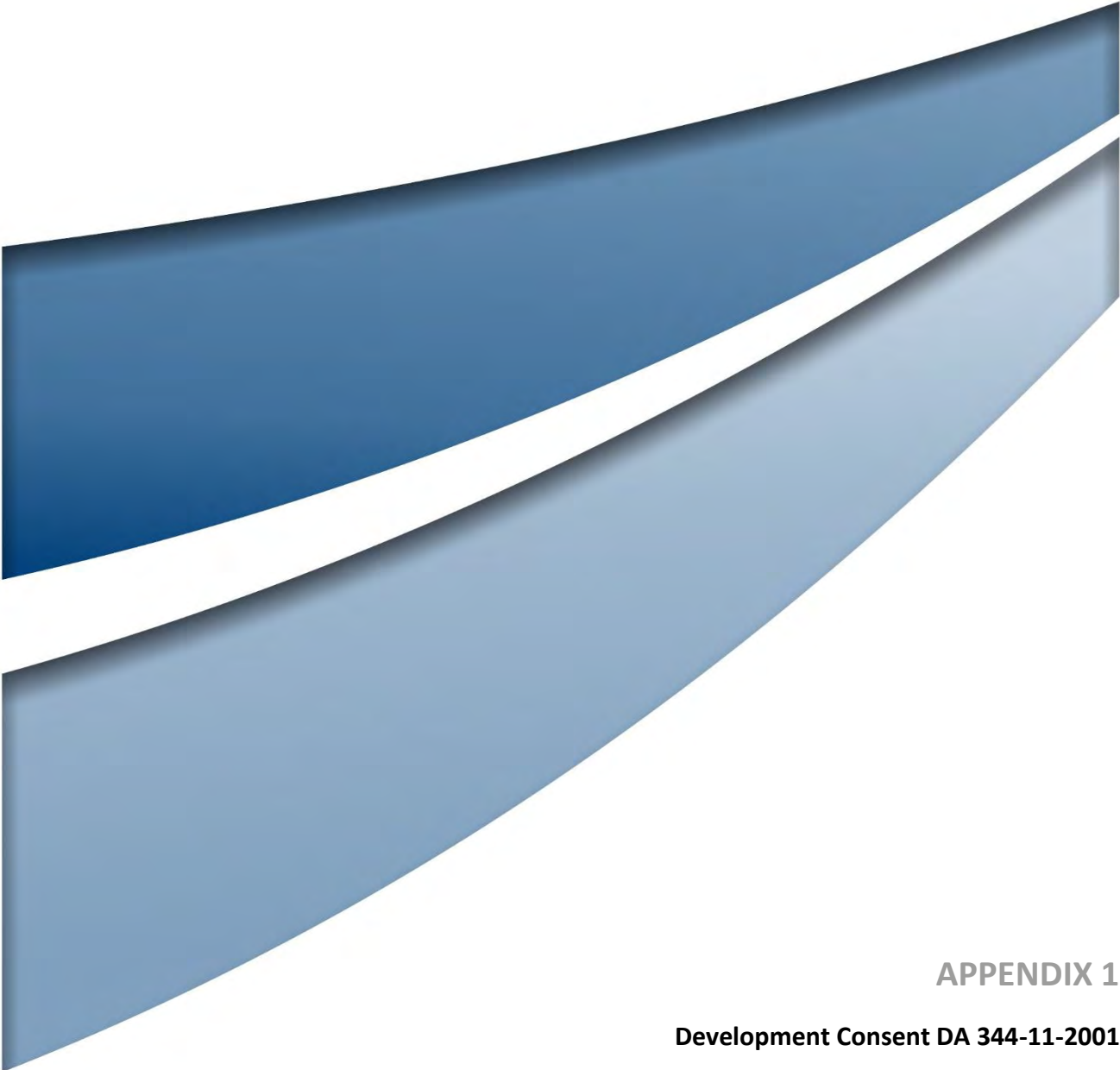
OzArk Environmental and Heritage Management Pty Ltd (OzArk) (2018). *Aboriginal and Cultural Heritage Assessment Report*. Prepared for Umwelt (Australia) Pty Limited on behalf of Walker Quarries Pty Limited, June 2019 Version: Final V3.

Pacrim Environmental (Pacrim) (2001). *Environmental Impact Statement Proposed Wallerawang Quarry*. Prepared for Sitegoal Pty. Limited, November 2001 (report 01/206.1).

Ramboll Australia Pty Ltd (Ramboll) (2019). *Wallerawang Quarry Modification Air Quality Assessment*. Intended for Walker Quarries Pty Ltd. May 2019. Final V1.

Rangott Mineral Exploration Pty Ltd (Rangott) (2021). *Annual Exploration Progress Report for the period 13 January 2020 to 12 January 2021*. February 2021.

Umwelt (Australia) Pty Ltd (Umwelt) (2020). *Mining Operations Plan (incorporating Rehabilitation Management Plan) for the Wallerawang Quarry*, July 2020.



APPENDIX 1

Development Consent DA 344-11-2001

Development Consent

Section 80 of the *Environmental Planning and Assessment Act 1979*

I, the Minister for Infrastructure and Planning, approve the Development Application referred to in Schedule 1, subject to the conditions in Schedule 2.

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 on-going environmental management of the development.

Craig Knowles, MP
Minister for Infrastructure and Planning

Signed 14 October 2004.

Sydney,

2004

File No. S03/02385

SCHEDULE 1

Development Application:	DA No. 344-11-2001
Applicant:	Sitegoal Pty Ltd (A.C.N. 052 317 503)
Consent Authority:	Minister for Infrastructure and Planning
Land:	Lot 6, DP 872230 Lot 7322, DP 1149335 Lot 7071, DP 1201227
Proposed Development:	To develop and operate a hard rock quarry and associated infrastructure with access from the Great Western Highway, including crushing and transport of product.
State Significant Development:	The proposal is classified as State significant development, under Section 76A(7) of the <i>Environmental Planning and Assessment Act 1979</i> , because it is an extractive industry where the proposed extraction rate is greater than 200,000 tonnes per annum, and consequently satisfies the criteria in the declaration made by the then Minister for Urban Affairs and Planning on 3 August 1999.

Integrated Development: The proposal is classified as integrated development, under Section 91 of the *Environmental Planning and Assessment Act 1979*, because it requires additional approvals under the:

- *Protection of the Environment Operations Act 1997*; and
- *Roads Act 1993*.

Designated Development: The proposal is classified as designated development, under Section 77A of the *Environmental Planning and Assessment Act 1979*, because it is for an extractive industry that would "obtain or process for sale, or reuse, more than 30,000 cubic metres of extractive material per year", and consequently meets the criteria for designated development in Schedule 3 of the *Environmental Planning and Assessment Regulation 2000*.

BCA Classification:

Class 5	Office/amenities building
Class 8	Workshop/storage building

Notes:

- *To find out when this consent becomes effective, see Section 83 of the Environmental Planning and Assessment Act 1979;*
 - *To find out when this consent is liable to lapse, see Section 95 of the Environmental Planning and Assessment Act 1979; and*
 - *To find out about appeal rights, see Section 97 of the Environmental Planning and Assessment Act 1979.*
-

Schedules 2-5 updated in entirety during Modification 1, dated 25 August 2017

Red type represents Modification 2 (7 December 2018)

Blue type represents Modification 3 (26 February 2020)

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DEFINITIONS

AHD	Australian Height Datum
AHIMS	Aboriginal Heritage Information Management System
Applicant	Walker Quarries Pty Ltd, or any other person/s who rely on this consent to carry out the development that is subject to this consent
BC Act	Biodiversity Conservation Act 2016
BCA	Building Code of Australia
BCD	Biodiversity Conservation Division within the Department
BCT	Biodiversity Conservation Trust
Calendar year	A period of 12 months from 1 January to 31 December
CCC	Community Consultative Committee required by condition 8 of Schedule 5
Conditions of consent	Conditions contained in Schedules 2 to 5 inclusive
Construction	The demolition of buildings or works, carrying out of works and erection of buildings covered by this consent
Council	Lithgow City Council
Day	The period from 7am to 6pm on Monday to Saturday, and 8am to 6pm on Sundays and Public Holidays
Department	NSW Department of Planning, Industry and Environment
Development	The development described in the documents listed in condition 2(c) of Schedule 2 as modified by the conditions of this consent
DPIE - Crown Lands	Crown Lands Division within the Department
DPIE - Water	Water Group within the Department
DRG	Division of Resources and Geosciences within the Department
EA (Mod 1)	Environmental Assessment titled ' <i>Modification to Operations at the Wallerawang Quarry (DA 344-11-2001)</i> ' dated May 2017 and the Applicant's response to submissions documentation dated July 2017
EIS	Environmental Impact Statement titled <i>Proposed Wallerawang Quarry</i> , dated November 2001 and the Applicant's Supplementary Report to the EIS, dated July 2002
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	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000</i>
EPL	Environment Protection Licence under the POEO Act
Evening	The period from 6pm to 10pm
Feasible	Means what is possible and practical in the circumstances
FCNSW	Forestry Corporation NSW
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
Land	Has the same meaning as the definition of the term in Section 1.4 of the EP&A Act, except for where the term is used in the noise and air quality conditions in Schedules 3 and 4 of this consent where it is defined to mean the whole of a lot, or contiguous lots owned by the same landowner, in a current plan registered at the NSW Land Registry Services office at the date of Modification 3
Material harm	Is harm to the environment that: <ul style="list-style-type: none"> • 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 of 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
Maximum groundwater level	The highest recorded groundwater level as established under condition 6A of Schedule 2
Minister	Minister for Planning and Public Spaces, or delegate
Mitigation	Activities associated with reducing the impacts of the development
Modification 3	The modification to the development as described in SEE (Mod 3)
Negligible	Small and unimportant, such as to be not worth considering
Night	The period from 10pm to 7am on Monday to Saturday, and 10pm to 8am on Sundays and Public Holidays
Non-compliance	An occurrence, set of circumstances or development that is in breach of this consent
NPfI	Noise Policy for Industry (NSW EPA 2017)
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
Privately-owned land	Land that is not owned by a public agency or the Applicant (or its subsidiary)
Public infrastructure	Linear and other infrastructure that provides services to the general public, such as roads, railways, water supply, drainage, sewerage, gas supply, electricity, telephone, telecommunications, etc.

Quarrying operations	The extraction, processing, stockpiling and transportation of extractive materials (including quartzite, which is also a prescribed mineral) carried out on the site and the associated removal of vegetation, topsoil and overburden
Quarry products	Includes all saleable quarry products, but excludes tailings, other wastes and rehabilitation material
Reasonable	Means applying judgement in arriving at a decision, taking into account: mitigation benefits, cost 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 and for the purpose of establishing a safe, stable and non-polluting environment
RFS	NSW Rural Fire Service
RMS	Roads and Maritime Services
RR	NSW Resources Regulator within the Department
Secretary	Planning Secretary under the EP&A Act, or nominee
SEE	Statement of Environmental Effects
SEE (Mod 2)	The Statement of Environmental Effects titled <i>Proposed Modification No 2 (MOD 2) to DA 344-11-2001 (Wallerawang Quarry)</i> , prepared by R.W. Corkery & Co Pty Ltd, dated October 2018; and associated Response to Submissions titled <i>Response to Submissions for Proposed Modification No 2 (Mod 2) to DA 344-11-2001 (Wallerawang Quarry)</i> , prepared by R.W. Corkery & Co Pty Limited, dated November 2018
SEE (Mod 3)	The SEE titled "Walker Quarries – Wallerawang Quarry – Modification 3", prepared by Umwelt (Australia) Pty Ltd, dated June 2019; and associated Response to Submissions titled "Walker Quarries – Wallerawang Quarry – Modification 3 – Response to Submissions", prepared by Umwelt (Australia) Pty Ltd, dated September 2019
Site	The land described in Schedule 1
Waste	Has the same meaning as the definition of the term in the Dictionary of the POEO Act
WaterNSW	Water NSW
WSEA	Western Stockpile Extension Area

SCHEDULE 2 ADMINISTRATIVE CONDITIONS

OBLIGATION TO MINIMISE HARM TO THE ENVIRONMENT

1. In addition to meeting the specific performance measures and criteria established under this consent, the Applicant must implement all reasonable and feasible measures to prevent and/or minimise any material harm to the environment that may result from the construction, operation, or rehabilitation of the development.

TERMS OF CONSENT

2. The development may only be carried out:
 - (a) in compliance with the conditions of this consent;
 - (b) in accordance with all written directions of the Secretary;
 - (c) generally in accordance with the EIS, EA (Mod 1), SEE (Mod 2) and SEE (Mod 3); and
 - (d) generally in accordance with the Development Layout in Appendix 1.
3. If there is any inconsistency between the documents in [condition 2\(c\)](#), the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this consent shall prevail to the extent of any inconsistency.
4. The Applicant must comply with any written requirement/s of the Secretary arising from the Department's assessment of:
 - (a) any strategies, plans, programs, reviews, audits, reports or correspondence that are submitted in accordance with this consent (including any stages of these documents);
 - (b) any reviews, reports or audits undertaken or commissioned by the Department regarding compliance with this consent; and
 - (c) the implementation of any actions or measures contained in these documents.

LIMITS ON CONSENT

Quarrying Operations

5. The Applicant may carry out quarrying operations on the site until 15 July 2040.

Note: Under this consent, the Applicant is required to rehabilitate the site and carry out additional requirements and undertakings to the satisfaction of the Secretary. Consequently, this consent will continue to apply in all respects other than the right to conduct quarrying operations until the rehabilitation of the site and those requirements and undertakings have been carried out to the standard required by the applicable conditions.

Extraction Depth

6. The Applicant must not conduct quarrying operations within one metre of the maximum groundwater level, with the exception of areas where the Applicant has received the written approval of the Secretary for the construction and use of drainage sumps, groundwater monitoring bores, exploration boreholes or other similar activity agreed by the Secretary.
- 6A. Prior to the commencement of quarrying operations below 901 mAHD (unless approved under condition 6 of this Schedule), the Applicant must:
 - (a) determine the maximum groundwater level within and adjacent to the proposed extraction area, in consultation with DPIE - Water, using all available groundwater and rainfall monitoring data collected from the site or in the vicinity of the site and appropriate modelling software and parameters;
 - (b) establish the proposed maximum extraction depth to comply with condition 6; and
 - (c) prepare a contour map or similar, showing the proposed maximum extraction depth; for the approval of the Secretary.

Limits on Extraction and Transport

7. The Applicant must not extract and/or transport more than 500,000 tonnes of quarry products from the site in any calendar year.

STRUCTURAL ADEQUACY

8. 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 Part 6 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 the development.

DEMOLITION

9. 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.

PROTECTION OF PUBLIC INFRASTRUCTURE

10. Unless the Applicant and the applicable authority agree otherwise the Applicant must:
- repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the development; and
 - relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the development.

Note: This condition does not apply to damage to roads caused as a result of general road usage.

OPERATION OF PLANT AND EQUIPMENT

11. The Applicant must ensure that all the plant and equipment used at the site, or to monitor the performance of the development is:
- maintained in a proper and efficient condition; and
 - operated in a proper and efficient manner.

PRODUCTION DATA

12. The Applicant must:
- from the commencement of quarrying operations provide calendar year annual quarry production data to RR using the standard form for that purpose; and
 - include a copy of this data in the Annual Review.

COMPLIANCE

13. The Applicant must ensure that all employees, contractors and sub-contractors are aware of, **are instructed to** and comply with, the conditions of this consent relevant to their respective activities.

CONTRIBUTIONS TO COUNCIL

14. Within 6 months of the date of approval of Modification 3, the Applicant must make contributions to Council for the provision of public facilities and to enhance amenity and services within the Lithgow LGA, in accordance with the *Section 94A Development Contributions Plan for Lithgow City Council October 2015*, or its most recent version.

Note: See also section 7.11 of the EP&A Act.

APPLICABILITY OF GUIDELINES

15. References in the conditions of this consent to any guideline, protocol, Australia Standard or policy are to such guidelines, protocols, Standards or policies in the form they are in as the date of inclusion (or later update) in the condition.
16. However, consistent with the conditions of this consent and without altering any limits or criteria in this consent, the Secretary may, in respect of ongoing monitoring and management obligations, agree to or require compliance with an updated or revised version of such a guideline, protocol, Standard or policy, or a replacement of them.

CROWN LAND

17. The Applicant must consult with DPIE - Crown Lands prior to undertaking any development on Crown land or Crown roads.

Notes:

- Under Section 265 of the Mining Act 1992, the Applicant is required to enter into a compensation agreement with DPIE - Crown Lands prior to undertaking any mining operations or related activities on Crown land or Crown roads within a mining lease.
- Under Section 141 of the Mining Act 1992, the Applicant is required to enter into an access arrangement with DPIE - Crown Lands prior to undertaking any prospecting operations on Crown land or Crown roads within an exploration licence.

**SCHEDULE 3
SPECIFIC ENVIRONMENTAL CONDITIONS**

NOISE

Hours of Operation

1. The Applicant must comply with the operating hours set out in Table 1.

Table 1: Operating Hours

Activity	Permissible Hours
Quarrying operations	<ul style="list-style-type: none"> • 7 am to 6 pm Monday to Friday • 8 am to 1 pm Saturday • At no time on Sundays or public holidays
Loading and dispatch of trucks	<ul style="list-style-type: none"> • May be conducted at any time, provided these activities comply with the noise criteria in Table 2
Blasting	<ul style="list-style-type: none"> • 9 am to 5 pm Monday to Friday • 9 am to 1 pm on Saturdays • At no time on Sundays or public holidays
Maintenance	<ul style="list-style-type: none"> • May be conducted at any time, provided that these activities are not audible at any privately-owned residence

2. The following activities may be carried out outside the hours specified in condition 1 above:
 - (a) delivery or dispatch of materials as requested by Police or other public authorities; and
 - (b) emergency work to avoid the loss of lives, property or to prevent environmental harm.

In such circumstances, the Applicant must notify the Secretary and affected residents prior to undertaking the activities, or as soon as is practical thereafter.

Operational Noise Criteria

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

Table 2: Operational noise criteria dB(A)

Noise Assessment Location	Day <i>L_{Aeq} (15 min)</i>	Evening <i>L_{Aeq} (15 min)</i>	Night <i>L_{Aeq} (15 min)</i>
All privately-owned residences	43	39	35

- 3A. Noise generated by the development must be monitored and measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the *NSW Noise Policy for Industry* (EPA, 2017).
- 3B. The noise criteria in Table 2 do not apply if the Applicant has an agreement with the owner/s of the relevant residence or land to exceed the noise criteria, and the Applicant has advised the Department in writing of the terms of this agreement.

Operating Conditions

4. The Applicant must:
 - (a) implement best practice management to minimise the construction, operational and road transportation noise of the development;
 - (b) minimise the noise impacts of the development during meteorological conditions when the noise criteria in this consent do not apply (see Appendix 3);
 - (c) carry out noise monitoring (at least every 3 months or as otherwise agreed with the Secretary) to determine whether the development is complying with the relevant conditions of this consent; and
 - (d) regularly assess noise monitoring data and modify and/or stop operations on site to ensure compliance with the relevant conditions of this consent,

to the satisfaction of the Secretary.

Note: Required frequency of noise monitoring may be reduced if approved by the Secretary.

Noise Management Plan

5. The Applicant must prepare a Noise Management Plan for the development to the satisfaction of the Secretary. This plan must:
- be prepared in consultation with the EPA;
 - be submitted to the Secretary within three months of the determination of Modification 1, unless otherwise agreed by the Secretary;
 - describe the measures to be implemented to ensure:
 - compliance with the noise criteria and operating conditions of this consent;
 - best practice management is being employed; and
 - the noise impacts of the development are minimised during meteorological conditions under which the noise criteria in this consent do not apply (see NPf1);
 - describe the proposed noise management system; and
 - include a monitoring program to be implemented to measure noise from the development against the noise criteria in Table 2, and which evaluates and reports on the effectiveness of the noise management system on site.

The Applicant must implement the Noise Management Plan as approved from time to time by the Secretary.

BLASTING

Blasting Impact Assessment Criteria

6. The Applicant must ensure that blasting on site does not cause any exceedance of the criteria in Table 3.
Table 3: Blasting Criteria

<i>Receiver</i>	<i>Airblast overpressure (dB(Lin Peak))</i>	<i>Ground vibration (mm/s)</i>	<i>Allowable exceedance</i>
Any residence on privately-owned land	120	10	0%
	115	5	5% of the total number of blasts over a period of 12 months
All public infrastructure	-	50	0%

However, these criteria do not apply if the Applicant has a written agreement with the relevant landowner or infrastructure owner to exceed the limits in Table 3, and the Applicant has advised the Department in writing of the terms of this agreement.

Property Inspections

7. If the Applicant receives a written request from the owner of any privately-owned land within 2 kilometres of the site for a property inspection to establish the baseline condition of any buildings and structures on their land, or to have a previous property inspection updated, then within 2 months of receiving this request the Applicant must:
- commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties to:
 - establish the baseline condition of any buildings and other structures on the land, or update the previous property inspection report; and
 - identify measures that should be implemented to minimise the potential blasting impacts of the development on these buildings and structures; and
 - give the landowner a copy of the new or updated property inspection report.

If there is a dispute over the selection of the suitably qualified, experienced and independent person, or the Applicant or the landowner disagrees with the findings of the property inspection report, either party may refer the matter to the Secretary for resolution.

Property Investigations

8. If the owner of any privately-owned land within 2 kilometres of the site or any other landowner where the Secretary is satisfied an investigation is warranted, or claims in writing that buildings or structures on their land have been damaged as a result of blasting on the site, then within 2 months of receiving this written claim the Applicant must:
- commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties to investigate the claim; and
 - 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 damage to the satisfaction of the Secretary.

If there is a dispute over the selection of the suitably qualified, experienced and independent person, or the Applicant or the landowner disagrees with the findings of the independent property investigation, then either party may refer the matter to the Secretary for resolution.

Operating Conditions

9. During blasting operations, the Applicant must:
- implement best practice management to:
 - protect the safety of people and livestock;
 - protect public or private infrastructure and property from damage; and
 - minimise the dust and fume emissions;
 - operate a suitable system to enable the local community to get up-to-date information on the proposed blasting schedule on site; and
 - carry out regular monitoring to determine whether the development is complying with the relevant conditions of this consent, to the satisfaction of the Secretary.

Blast Management Plan

10. The Applicant must prepare a Blast Management Plan for the development to the satisfaction of the Secretary. This plan must:
- be submitted to the Secretary for approval within three months of the determination of Modification 1, unless otherwise agreed by the Secretary;
 - describe the measures to be implemented to ensure compliance with the blast criteria and operating conditions of this consent;
 - include measures to manage flyrock to ensure the safety of people and livestock and to protect properties;
 - include a monitoring program for evaluating and reporting on compliance with the blasting criteria in this consent;
 - include local community notification procedures for the blasting schedule, in particular to nearby residences; and
 - include a protocol for investigating and responding to complaints related to blasting operations.

The Applicant must implement the Blast Management Plan as approved from time to time by the Secretary.

AIR QUALITY

Air Quality Criteria

11. The Applicant must ensure that particulate matter emissions generated by the development do not cause exceedances of the criteria in Table 4 at any residence on privately-owned land.

Table 4: Air quality criteria

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

Notes:

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

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

own).

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

12. The air quality criteria in Table 4 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

13. The Applicant must:
- implement best practice management to minimise the dust emissions of the development;
 - regularly assess meteorological and air quality monitoring data and relocate, modify and/or stop operations on site to ensure compliance with the air quality criteria in this consent;
 - minimise the air quality impacts of the development during adverse meteorological conditions and extraordinary events (see note c under Table 4);
 - monitor and report on compliance with the relevant air quality conditions in this consent; and
 - minimise the area of surface disturbance and undertake progressive rehabilitation of the site, to the satisfaction of the Secretary.

Air Quality Management Plan

14. The Applicant must prepare an Air Quality Management Plan for the development to the satisfaction of the Secretary. This plan must:
- be submitted to the Secretary for approval within three months of the determination of Modification 1, unless otherwise agreed by the Secretary;
 - describe the measures to be implemented to ensure:
 - compliance with the air quality criteria and operating conditions of this consent;
 - best practice management is being employed; and
 - the air quality impacts of the development are minimised during adverse meteorological conditions and extraordinary events;
 - describe the proposed air quality management system;
 - include an air quality monitoring program that:
 - is capable of evaluating the performance of the development;
 - includes a protocol for determining any exceedances of the relevant conditions of consent;
 - effectively supports the air quality management system; and
 - evaluates and reports on the adequacy of the air quality management system.

The Applicant must implement the approved Air Quality Management Plan as approved from time to time by the Secretary.

Meteorological Monitoring

15. For the life of the development, the Applicant must ensure that there is a suitable meteorological station operating in close proximity to the site that:
- complies with the requirements in the Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales (DEC, 2007); and
 - is capable of measuring meteorological conditions in accordance with the *NSW Noise Policy for Industry* (EPA, 2017), unless a suitable alternative is approved by the Secretary following consultation with EPA.

SOIL AND WATER

Water Supply

16. The Applicant must ensure that it has sufficient water for all stages of the development, and if necessary, adjust the scale of operations under the consent to match its available water supply, to the satisfaction of the Secretary.

Water Discharges

17. The Applicant must comply with the discharge limits in any EPL, or with section 120 of the POEO Act.

Soil and Water Management Plan

18. The Applicant must prepare a Soil and Water Management Plan for the development to the satisfaction of the Secretary. This plan must:
- (a) be prepared by suitably qualified and experienced person/s approved by the Secretary;
 - (b) be prepared in consultation with the EPA, [DPIE - Water](#) and WaterNSW;
 - (c) be submitted to the Secretary for approval within three months of the determination of [Modification 1](#) and [Modification 3](#), unless otherwise agreed by the Secretary; and
 - (d) include a:
 - i. Site Water Balance that includes:
 - details of:
 - a. sources and security of water supply;
 - b. water use and management on site;
 - c. any off-site water transfers; and
 - d. reporting procedures; and
 - measures to be implemented to minimise clean water use on site;
 - ii. Surface Water Management Plan, that includes:
 - a program for obtaining detailed baseline data on surface water flows and quality in water bodies that could potentially be affected by the development;
 - a detailed description of the surface water management system on site including the:
 - a. clean water diversion system;
 - b. erosion and sediment controls;
 - c. dirty water management system; and
 - d. water storages; and
 - a program to monitor and report on:
 - a. any surface water discharges;
 - b. the effectiveness of the water management system,
 - c. the quality of water discharged from the site to the environment;
 - d. surface water flows and quality in local watercourses;
 - iii. Groundwater Management Plan that includes:
 - a provision that requires the Applicant to obtain appropriate water licence(s) to cover the volume of any unforeseen groundwater inflows into the quarry from the quarry face or floor; and
 - a monitoring program to manage potential impacts, if any, on any alluvium and associated surface water source near the proposed extraction area that includes:
 - a. identification of a methodology for determining threshold water level criteria;
 - b. contingency measures in the event of a breach of thresholds; and
 - c. a program to regularly report on monitoring.

The Applicant must implement the approved Soil and Water Management Plan as approved from time to time by the Secretary.

TRANSPORT

Monitoring of Product Transport

19. The Applicant must keep accurate records of all laden truck movements to and from the site and publish a summary of records on its website every 6 months.

Operating Conditions

20. The Applicant must:
- a. ensure that all laden trucks entering or exiting the site have their loads covered, with the exception of loads consisting solely of boulders greater than one tonne in weight;
 - b. ensure that all laden trucks exiting the site are cleaned of material that may fall from vehicles, before leaving the site; and
 - c. use its best endeavours to ensure that appropriate signage is displayed on all trucks used to transport product from the development so they can be easily identified by road users.

PROTECTION OF ABORIGINAL HERITAGE

21. [The Applicant must ensure that the development does not cause any direct or indirect impact on any identified heritage item located outside the approved disturbance area, beyond those predicted in the document/s listed in condition 2\(c\) of Schedule 2.](#)

22. 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 BCD, and work must not recommence in the area until authorised by NSW Police and BCD.
23. 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) BCD must be contacted immediately.
- 23A. Work in the immediate vicinity may only recommence if:
- (a) the potential Aboriginal object or Aboriginal place is confirmed by BCD upon consultation with the Registered Aboriginal Parties not to be an Aboriginal object or Aboriginal Place; or
 - (b) the Aboriginal Cultural Heritage Management Plan required by condition 23C is revised to include the Aboriginal object or Aboriginal place and appropriate measures in respect of it, to the satisfaction of the Secretary; or
 - (c) the 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.
- 23B. The Applicant must ensure that all known Aboriginal objects or Aboriginal places on the site and within any offset areas are properly recorded, and those records are kept up to date, in the AHIMS Register.

Aboriginal Cultural Heritage Management Plan

- 23C. The Applicant must prepare an Aboriginal Cultural Heritage Management Plan for the development to the satisfaction of the Secretary. This plan must:
- (a) be prepared by suitably qualified and experienced person/s whose appointment has been endorsed by the Secretary;
 - (b) be prepared in consultation with BCD and Registered Aboriginal Parties;
 - (c) describe the measures to be implemented on the site or within any offset area to:
 - (i) comply with the heritage-related operating conditions of this consent;
 - (ii) ensure all workers receive suitable Aboriginal cultural heritage inductions prior to carrying out any activities which may cause impacts to Aboriginal objects or Aboriginal places, and that suitable records are kept of these inductions;
 - (iii) protect, monitor and manage identified Aboriginal objects and Aboriginal places (including any proposed archaeological investigations of potential subsurface objects and salvage of objects within the approved disturbance area) in accordance with the commitments made in the document/s listed in condition 2(c) of Schedule 2;
 - (iv) protect Aboriginal objects and Aboriginal places located outside the approved disturbance area from impacts of the development;
 - (v) manage the discovery of suspected human remains and any new Aboriginal objects or Aboriginal places, including provisions for burials, over the life of the development;
 - (vi) maintain and manage reasonable access for relevant Aboriginal stakeholders to Aboriginal objects and Aboriginal places (outside of the approved disturbance area); and
 - (vii) facilitate ongoing consultation and involvement of Registered Aboriginal Parties in the conservation and management of Aboriginal cultural heritage on the site;
 - (d) include a strategy for the care, control and storage of Aboriginal objects salvaged on site, in particular AHIMS Site #45-1-2802, both during the life of the development and in the long-term.
- 23D. The Applicant must not commence any ground disturbance associated with Modification 3 until the Aboriginal Cultural Heritage Management Plan is approved by the Secretary.
- 23E. The Applicant must implement the Aboriginal Cultural Heritage Management Plan approved by the Secretary.

BIODIVERSITY AND REHABILITATION

Biodiversity Offset Strategy

24. By 28 February 2018, the Applicant must provide a Biodiversity Offset Strategy in accordance with the *Framework for Biodiversity Assessment - NSW Biodiversity Offsets Policy for Major Projects*, for the retirement of ecosystem and species credits as set out in Table 5, to the satisfaction of the Secretary and BCD.

Table 5: Biodiversity credits to be retired

Credit type	Number of Credits
Ecosystem Credits	
PCT 732 – Broad-leaved Peppermint - Ribbon Gum grassy open forest in the north east of the South Eastern Highlands Bioregion	120
PCT 1093 – Red Stringybark – Brittle Gum – Inland Scribbly Gum dry open forest of the tablelands, South Eastern Highlands Bioregion	34
Species Credits	
Purple Copper Butterfly	184

Security of Offsets

25. By 31 December 2018, unless otherwise agreed with the Secretary, the Applicant must make suitable arrangements to provide appropriate long-term security for the Biodiversity Offset Strategy, to the satisfaction of the Secretary. Any mechanism must remain in force in perpetuity.

Note: Mechanisms to provide appropriate long-term security to the land within the Biodiversity Offset Strategy in accordance with the NSW Biodiversity Offset Policy for Major Projects 2014.

Biodiversity Management Plan

26. The Applicant must prepare a Biodiversity Management Plan for the development to the satisfaction of the Secretary. This plan must:
- be prepared by suitably qualified and experienced persons whose appointment has been endorsed by the Secretary;
 - be prepared in consultation with BCD;
 - be submitted to the Secretary within three months of providing a satisfactory Biodiversity Offset Strategy or by 31 March 2018, whichever is earlier;
 - describe the short, medium, and long-term measures to be undertaken to manage the remnant vegetation and fauna habitat on the site
 - include a detailed description of the measures described in paragraph (d) to be implemented over the next 3 years (to be updated for each 3-year period following initial approval of the plan) including the procedures to be implemented for:
 - maximising the salvage of environmental resources within the approved disturbance area, including tree hollows, vegetative and soil resources, for beneficial reuse in the enhancement of any biodiversity offset areas or site rehabilitation;
 - restoring and enhancing the quality of native vegetation and fauna habitat in any biodiversity offset and rehabilitation areas through assisted natural regeneration, targeted vegetation establishment and the introduction of fauna habitat features;
 - protecting vegetation and fauna habitat outside the approved disturbance area on-site;
 - minimising the impacts on native fauna, including undertaking pre-clearance surveys;
 - ensuring minimal environmental consequences for threatened species, populations and habitats, including the Purple Copper Butterfly;
 - collecting and propagating seed;
 - controlling weeds and feral pests;
 - controlling erosion; and
 - managing bushfire risk;
 - include a program to monitor and report on the effectiveness of these measures, and progress against the performance and completion criteria;
 - identify the potential risks to the successful implementation of the Biodiversity Offset Strategy, and include a description of the contingency measures to be implemented to mitigate these risks; and
 - include details of who is responsible for monitoring, reviewing, and implementing the plan.

The Applicant must implement the Biodiversity Management Plan as approved from time to time by the Secretary.

Conservation Bond

27. Within six months of the approval of the Biodiversity Offset Strategy, unless otherwise agreed by the Secretary, the Applicant must lodge a Conservation Bond with the Department to ensure that the Biodiversity Offset Strategy is implemented in accordance with the performance and completion criteria in the Biodiversity Management Plan. The sum of the bond must be determined by:

- a. calculating the full cost of implementing the Biodiversity Offset Strategy at third party rates (other than land acquisition costs); and
- b. employing a suitably qualified, independent and experienced person to verify the calculated costs.

The calculation of the Conservation Bond must be submitted to the Department for approval at least 1 month prior to the lodgment of the bond.

28. The Conservation Bond must be reviewed and if required, an updated bond must be lodged with the Department within 3 months following:
 - a. an update or revision to the Biodiversity Management Plan;
 - b. the completion of an Independent Environmental Audit in which recommendations relating to the implementation of the Biodiversity Offset Strategy have been made; or
 - c. in response to a request by the Secretary.

If the Biodiversity Offset Strategy is completed generally in accordance with the completion criteria in the Biodiversity Management Plan to the satisfaction of the Secretary, the Secretary will release the bond.

If the Biodiversity Offset Strategy is not completed generally in accordance with the completion criteria in the Biodiversity Management Plan, the Secretary will call in all, or part of, the conservation bond, and arrange for the completion of the relevant works.

Biodiversity Credits Required for Modification 3

- 28A. The Applicant must retire biodiversity credits for Stages A to D of the development approved under Modification 3 (see Figure 2 in Appendix 1) as specified in Table 5A below, prior to commencing vegetation clearing in that Stage. The retirement of credits must be carried out in consultation with BCD and in accordance with the Biodiversity Offsets Scheme of the BC Act, to the satisfaction of the BCT.

Table 5A: Biodiversity credit requirements

Credit Type	Credits Required
Ecosystem Credits	
Tranche 1 - Credits to be retired for Stage A PCT 1093 – 100 credits PCT 732 – 36 credits	136
Tranche 2 - Credits to be retired for Stage B PCT 1093 – 64 credits PCT 732 – 103 credits	167
Tranche 3 - Credits to be retired for Stage C PCT 1093 – 52 credits PCT 732 – 75 credits	127
Tranche 4 - Credits to be retired for Stage D PCT 1093 – 57 credits	57

Note: The stages referenced in Table 5A are shown in Figure 2 in Appendix 1.

Rehabilitation Objectives

29. The Applicant must rehabilitate the site to the satisfaction of RR and the Secretary. This rehabilitation must be generally consistent with the proposed rehabilitation activities described in the documents listed in condition 2 of Schedule 2 (and shown conceptually in the Rehabilitation Plan in Appendix 2), and comply with the objectives in Table 6.

Table 6: Rehabilitation Objectives

Feature	Objective
All areas of the site affected by the development	<ul style="list-style-type: none"> • Safe • Hydraulically and geotechnically stable • Non-polluting

	<ul style="list-style-type: none"> • Fit for the intended post-development 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	<ul style="list-style-type: none"> • Decommissioned and removed, unless otherwise agreed by the Secretary
Quarry benches and pit floor	<ul style="list-style-type: none"> • Landscaped and vegetated using native tree and understorey species
Final Void	<ul style="list-style-type: none"> • Minimise the size, depth and slope of the batters of the final void • Minimise the drainage catchment of the final void

Progressive Rehabilitation

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

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

Rehabilitation Management Plan

31. The Applicant must prepare a Rehabilitation Management Plan for the project to the satisfaction of [RR](#). This plan must:
- be prepared by suitably qualified and experienced persons whose appointment has been endorsed by the Secretary;
 - be prepared in consultation with the Department, [DPIE - Water](#), FCNSW, [BCD](#), [WaterNSW](#) and Council;
 - be submitted to [RR and the Secretary](#) for approval within three months of the determination of Modification 1, unless the Secretary agrees otherwise, [and Modification 3, unless the RR agrees otherwise](#);
 - be prepared in accordance with any relevant [RR](#) Guideline;
 - describe how the rehabilitation of the site would achieve the objectives identified in Table 6 and be integrated with the Biodiversity Offset Strategy described in condition [24](#);
 - include a detailed soil and growing medium balance for the development;
 - include a detailed plan for the reinstatement and review of the proposed rehabilitated woodland areas and fauna habitat, including a protocol for periodic trials to demonstrate that the target vegetation community is being achieved;
 - include detailed performance and completion criteria for evaluating the performance of the rehabilitation of the site, and for triggering remedial action (if necessary);
 - describe the measures to be implemented to ensure compliance with the relevant conditions of this consent, and address all aspects of rehabilitation including [closure of the development](#), final landform (including final voids), final land uses;
 - include procedures for the use of interim stabilisation and temporary vegetation strategies, where reasonable to minimise the area exposed for dust generation;
 - include a program to monitor, independently audit and report on the effectiveness of the measures in paragraph (h) above, and progress against the detailed performance and completion criteria in paragraph (g) above; and
 - build on to the maximum extent practicable and integrate with the other Management Plans required under this consent.

VISUAL

32. The Applicant must implement all reasonable and feasible measures to minimise the visual and off-site lighting impacts of the development to the satisfaction of the Secretary.
33. Prior to utilising the WSEA, the Applicant must construct a visual bund between the north-western boundary of the WSEA and the Great Western Highway, as described in EA (Mod 1). The visual bund must be maintained to the satisfaction of the Secretary.
34. The Applicant must install bunds at strategic locations around the site and plant additional trees along the boundary of the development site to screen, so far as is reasonable and feasible, the development from external viewers, to the satisfaction of the Secretary

WASTE

35. The Applicant must:

- (a) manage on-site sewage treatment and disposal in accordance with the requirements of its EPL, and to the satisfaction of the 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
- (d) report on waste management and minimisation in the Annual Review, to the satisfaction of the Secretary.

36. Except as expressly permitted in an EPL, [specific resource recovery order or exemption under the Protection of the Environment Operations \(Waste\) Regulation 2014](#), the Applicant must not receive waste at the site for storage, treatment, processing, reprocessing or disposal.

LIQUID STORAGE

37. The Applicant must ensure that all tanks and similar storage facilities (other than for water) are protected by appropriate bunding or other containment, in accordance with the relevant Australian Standards.

DANGEROUS GOODS

38. [The Applicant must ensure that the storage, handling and transport of:](#)
- (a) [dangerous goods are done in accordance with the relevant Australian Standards, particularly AS1940 and AS1596, and the Dangerous Goods Code; and](#)
 - (b) [explosives are managed in accordance with the requirements of the RR.](#)

BUSHFIRE

39. The Applicant must:
- (a) ensure that the development is suitably equipped to respond to any fires on site; and
 - (b) assist the Rural Fire Service and emergency services to the extent practicable if there is a fire in the vicinity of the site.
40. The Applicant must prepare a Bushfire Management Plan for the site, in consultation with FCNSW, to the satisfaction of the Rural Fire Service.

SCHEDULE 4

ADDITIONAL PROCEDURES

NOTIFICATION OF LANDOWNERS

1. As soon as practicable, and no longer than 7 days, after obtaining monitoring results showing:
 - (a) an exceedance of any criteria in Schedule 3, the Applicant must notify the affected landowners in writing of the exceedance, and provide regular monitoring results, at least every 3 months, to each affected landowner until the development is again complying with the relevant criteria; and
 - (b) an exceedance of any air quality criteria in Schedule 3, the Applicant must send a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time) to the affected landowners and current tenants of the land (including the tenants of land which is not privately-owned).

INDEPENDENT REVIEW

2. If an owner of privately-owned land considers the development to be exceeding the relevant criteria in Schedule 3, then he/she may ask the Secretary in writing for an independent review of the impacts of the development on his/her land.

If the Secretary is satisfied that an independent review is warranted, then within 2 months of the Secretary's decision, the Applicant must:

- (a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Secretary, to:
 - consult with the landowner to determine his/her concerns;
 - conduct monitoring to determine whether the development is complying with the relevant criteria in Schedule 3; and
 - if the development is not complying with these criteria, then identify measures that could be implemented to ensure compliance with the relevant criteria; and
- (b) give the Secretary and landowner a copy of the independent review; and
- (c) comply with any written requests made by the Secretary to implement any findings of the review.

VISUAL IMPACT MITIGATION

3. If an owner of privately-owned land considers that the visual impacts of the development at his/her land could be minimised, then he/she may ask the Secretary in writing for a review of the visual impacts of the development on his/her land.

If the Secretary is satisfied that a review is warranted, then within 2 months of the Secretary's decision, the Applicant must:

- (a) commission a suitably qualified and experienced person, whose appointment has been approved by the Secretary, to:
 - consult with the landowner to determine his/her concerns;
 - investigate ways to minimise the visual impacts of the development on land; and
 - prepare a visual mitigation report detailing the outcomes of the investigation and the proposed mitigation measures.
- (b) give the Secretary and landowner a copy of the review; and
- (c) comply with any written requests made by the Secretary to implement any findings of the review.

SCHEDULE 5
ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING

ENVIRONMENTAL MANAGEMENT

Environmental Management Strategy

1. The Applicant must prepare an Environmental Management Strategy for the development to the satisfaction of the Secretary. This strategy must:
 - (a) be submitted to the Secretary for approval within 6 months of the Secretary requiring preparation of the strategy by notice to the Applicant;
 - (b) provide the strategic framework for environmental management of the development;
 - (c) identify the statutory approvals that apply to the development;
 - (d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the development;
 - (e) describe the procedures to be implemented to:
 - keep the local community and relevant agencies informed about the operation and environmental performance of the development;
 - receive, record, handle and respond to complaints;
 - resolve any disputes that may arise during the course of the development;
 - respond to any non-compliance and any incident;
 - respond to emergencies; and
 - (f) include:
 - copies of any strategies, plans and programs approved under the conditions of this consent; and
 - a clear plan depicting all the monitoring to be carried out under the conditions of this consent.

The Applicant must implement any Environmental Management Strategy as approved from time to time by the Secretary.

Evidence of Consultation

2. 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 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.

Management Plan Requirements

3. Management plans required under this consent must be prepared in accordance with relevant guidelines, and include:
 - (a) a summary of relevant background or baseline data;
 - (b) details of:
 - (i) the relevant statutory requirements (including any relevant approval, licence or lease conditions);
 - (ii) any relevant limits or performance measures and criteria; and
 - (iii) the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures;
 - (c) any relevant commitments or recommendations identified in the document/s listed in condition 2(c) of Schedule 2;
 - (d) a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria;
 - (e) a program to monitor and report on the:
 - (i) impacts and environmental performance of the development; and
 - (ii) effectiveness of the management measures set out pursuant to condition 2(c) of Schedule 2;
 - (f) contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;
 - (g) a program to investigate and implement ways to improve the environmental performance of the development over time;
 - (h) a protocol for managing and reporting any:
 - (i) incident, non-compliance or exceedance of the impact assessment criteria or performance criteria;
 - (ii) complaint; or

- (iii) failure to comply with statutory requirements;
- (i) public sources of information and data to assist stakeholders in understanding environmental impacts of the development; and
- (j) a protocol for periodic review of the plan.

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

- 3A. The Applicant must ensure that management plans prepared for the development are consistent with the conditions of this consent and any EPL issued for the site.

Application of Existing Management Plans

4. The Applicant must continue to apply existing approved management plans, strategies or monitoring programs that have most recently been approved under this consent, until the approval of a similar plan, strategy or program under this consent.

Revision of Strategies, Plans & Programs

5. Within 3 months of the submission of an:
- (a) incident report under condition 9 below;
 - (b) Annual Review under condition 11 below;
 - (c) audit report under [condition 14](#) below; and
 - (d) any modifications to this consent,
- the Applicant must review the strategies, plans and programs required under this consent, to the satisfaction of the Secretary. The applicant must notify the Department in writing of any such review being undertaken. Where this review leads to revisions in any such document, then within 6 weeks of the review the revised document must be submitted for the approval of the Secretary.

Note: The purpose of this condition is to ensure that strategies, plans and programs are regularly updated to incorporate any measures recommended to improve environmental performance of the development.

Updating and Staging of Strategies, Plans or Programs

6. [With the approval of the Secretary, the Applicant may:](#)
- (a) [prepare and submit any strategy, plan or program required by this consent on a staged basis \(if a clear description is provided as to the specific stage and scope of the development to which the strategy, plan or program applies, the relationship of the stage to any future stages and the trigger for updating the strategy, plan or program\);](#)
 - (b) [combine any strategy, plan or program required by this consent \(if a clear relationship is demonstrated between the strategies, plans or programs that are proposed to be combined\); and](#)
 - (c) [update any strategy, plan or program required by this consent \(to ensure the strategies, plans and programs required under the consent are updated on a regular basis and incorporate additional measures or amendments to improve the environmental performance of the development\).](#)
- 6A. [If the Secretary agrees, a strategy, plan or program may be staged without addressing particular requirements of the relevant condition of this consent if those requirements are not applicable to a particular stage.](#)
- 6B. [If the Secretary agrees, a strategy, plan or program may be staged or updated without consultation being undertaken with all parties required to be consulted in the relevant condition in this consent.](#)

Adaptive Management

7. The Applicant must assess and manage development-related risks to ensure that there are no exceedances of the criteria and/or performance measures in Schedule 3. Any exceedance of these criteria and/or performance measures constitutes a breach of this consent and may be subject to penalty or offence provisions under the EP&A Act or EP&A Regulation.

Where any exceedance of these criteria and/or performance measures has occurred, the Applicant must as soon as becoming aware of any exceedance:

- (a) take all reasonable and feasible steps to ensure that the exceedance ceases and does not reoccur;
 - (b) consider all reasonable and feasible options for remediation (where relevant);
 - (c) within 14 days of the exceedance occurring, submit a report to the Secretary describing these remediation options and any preferred remediation measures or other course of action; and
 - (d) implement remediation measures as directed by the Secretary;
- to the satisfaction of the Secretary.

COMMUNITY CONSULTATIVE COMMITTEE

8. The Applicant must establish and operate a Community Consultative Committee (CCC) for the development to the satisfaction of the Secretary. The CCC must be operated in general accordance with the Department's *Community Consultative Committee Guidelines, 2019* (or later version).

Notes:

- *The CCC is an advisory committee. The Department and other relevant agencies are responsible for ensuring that the Applicant complies with this consent.*
- *In accordance with the guidelines, the Committee should comprise an independent chair and appropriate representation from the Applicant, Council and the local community.*

REPORTING

Incident Reporting

9. 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

10. 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 Review

11. By the end of September in each year after the commencement of development, or other timeframe agreed by the Secretary, a report must be submitted to the Department reviewing the environmental performance of the development, to the satisfaction of the Secretary. This review must:
 - (a) describe the development (including any progressive rehabilitation) that was carried out in the previous financial year, and the development that is proposed to be carried out over the current financial year;
 - (b) include a comprehensive review of the monitoring results and complaints records of the development over the previous financial 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 in condition 2(c) of Schedule 2;
 - (c) identify any non-compliance or incident which occurred in the previous financial 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 financial year to improve the environmental performance of the development.
12. Copies of the Annual Review must be submitted to Council and made available to the CCC and any interested person upon request.

INDEPENDENT ENVIRONMENTAL AUDIT

13. Prior to the end of June 2021, and every three years after, unless the 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 Secretary
 - (b) be conducted by a suitably qualified, experienced and independent team of experts (including any expert in field/s specified by the Secretary) whose appointment has been endorsed by the Secretary;

- (c) be carried out in consultation with the relevant agencies and 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 Secretary.
14. Within 12 weeks of commencing this audit, or as otherwise agreed by the Secretary, the Applicant must submit a copy of the audit report to the 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 these recommendations as required. The Applicant must implement these recommendations, to the satisfaction of the Secretary.

Monitoring and Environmental Audits

15. 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 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.

16. 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.

ACCESS TO INFORMATION

17. Within 6 months of the date of this consent until the completion of all rehabilitation required under this consent, the Applicant must:
- (a) make the following information and documents (as they are obtained, approved or as otherwise stipulated within the conditions of this consent) publicly available on its website:
 - (i) the document/s listed in condition 2(c) of Schedule 2;
 - (ii) all current statutory approvals for the development;
 - (iii) all approved strategies, plans and programs required under the conditions of this consent;
 - (iv) the proposed staging plans for the development if the construction, operation or decommissioning of the development if it is to be staged;
 - (v) minutes of CCC meetings;
 - (vi) regular reporting on the environmental performance of the development in accordance with the reporting requirements in any plans or programs approved under the conditions of this consent;
 - (vii) a comprehensive summary of the monitoring results of the development, reported in accordance with the specifications in any conditions of this consent, or any approved plans and programs;
 - (viii) a summary of the current progress of the development;
 - (ix) contact details to enquire about the development or to make a complaint;
 - (x) a complaints register, updated monthly;
 - (xi) the Annual Reviews of the development;
 - (xii) audit reports prepared as part of any Independent Environmental Audit of the development and the Applicant’s response to the recommendations in any audit report;
 - (xiii) any other matters required by the Secretary; and
 - (b) keep such information up to date, to the satisfaction of the Secretary.

APPENDIX 1 DEVELOPMENT LAYOUT PLAN

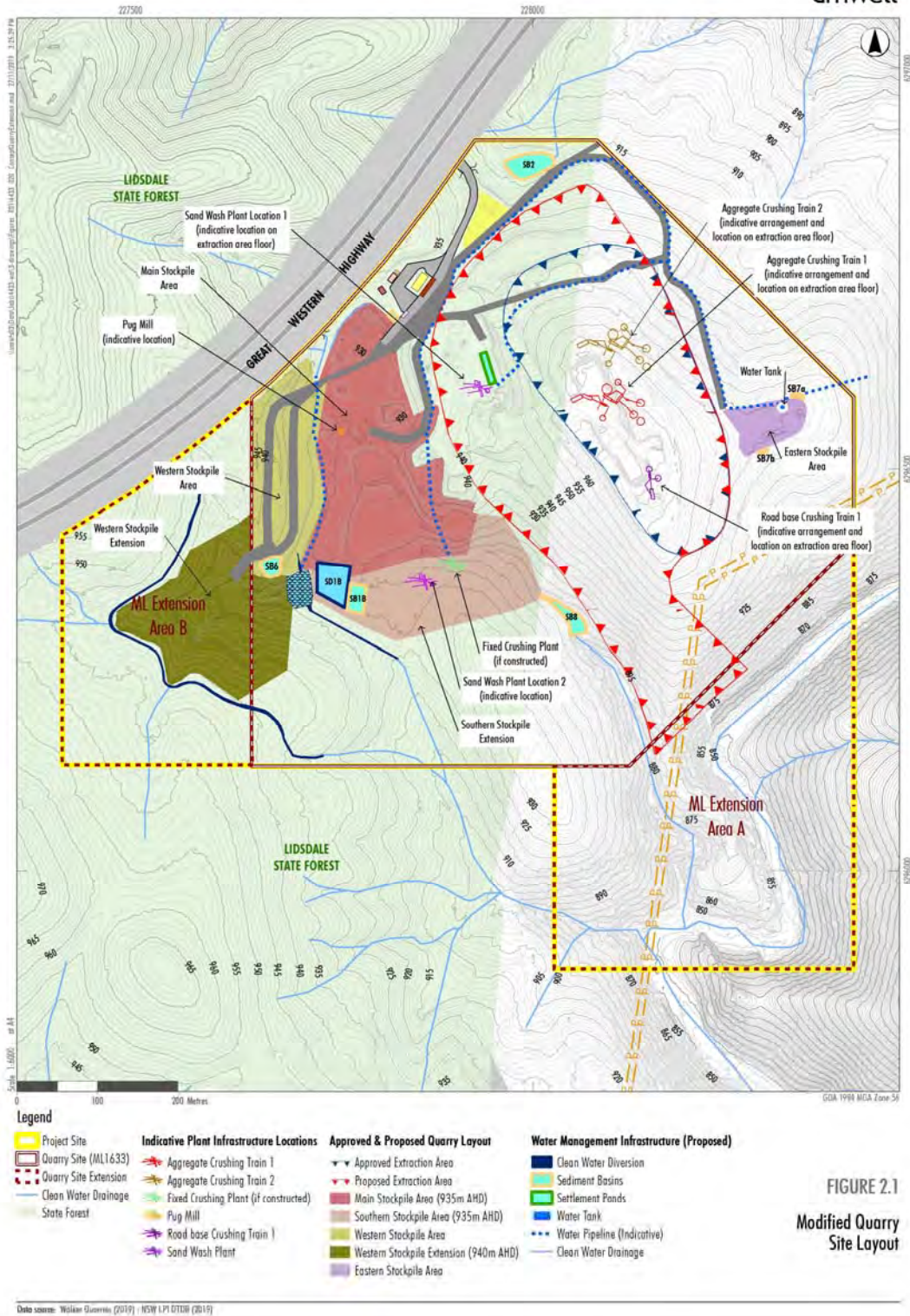


FIGURE 2.1
Modified Quarry Site Layout

Figure 1: Development Layout incorporating Modification 3

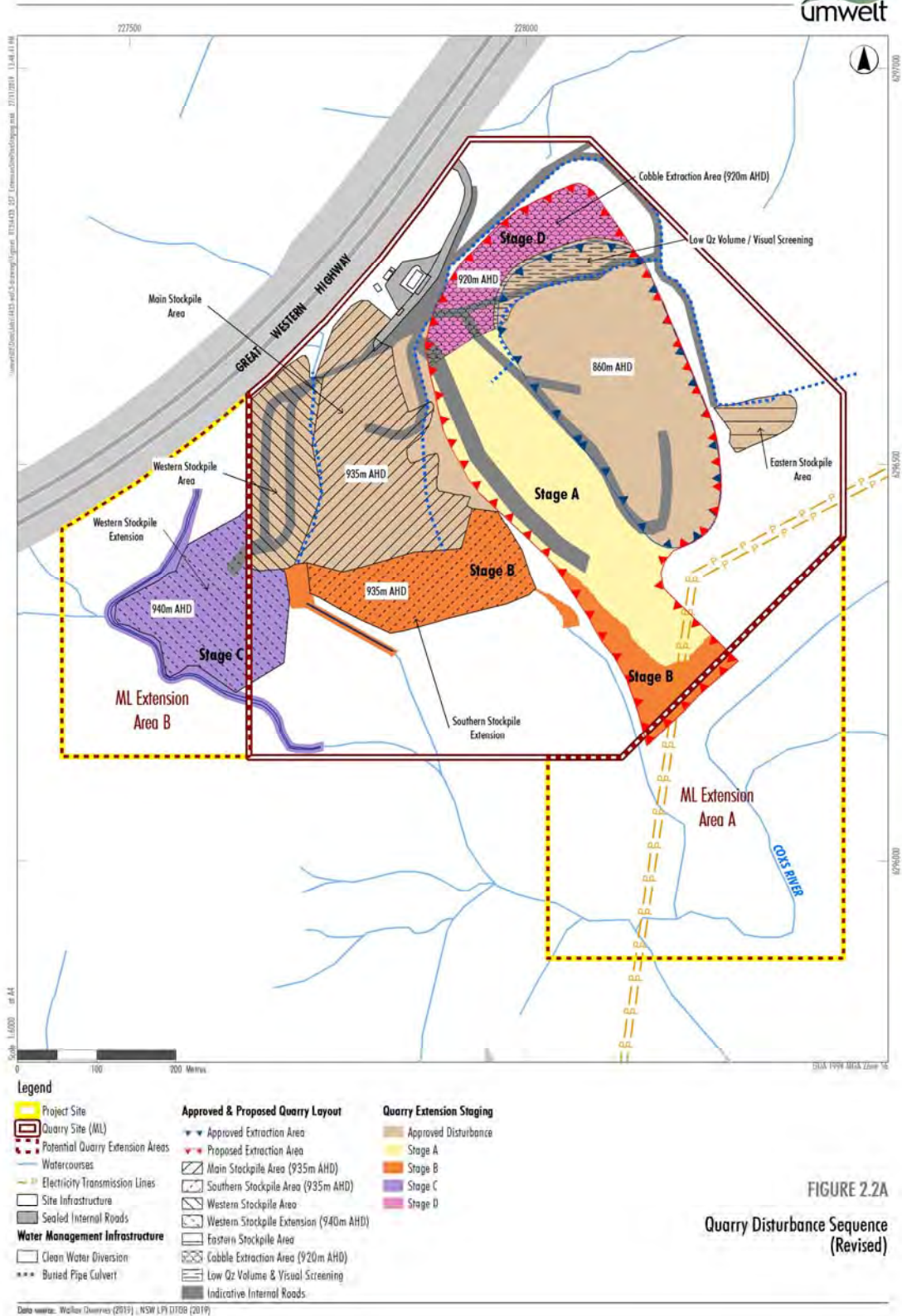


Figure 2: Development Layout incorporating proposed stages

APPENDIX 2 CONCEPTUAL REHABILITATION PLAN

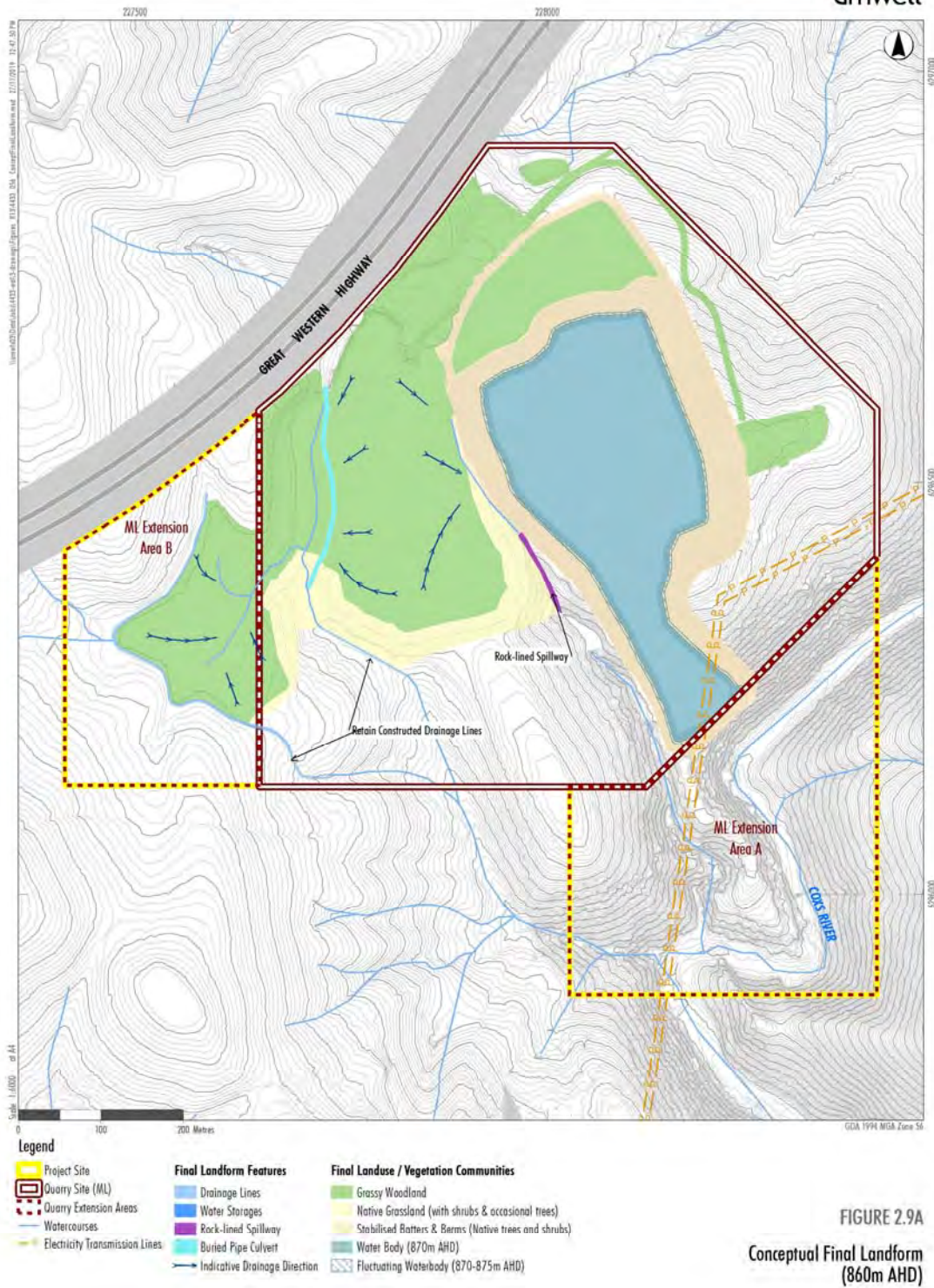


FIGURE 2.9A

Conceptual Final Landform
(860m AHD)

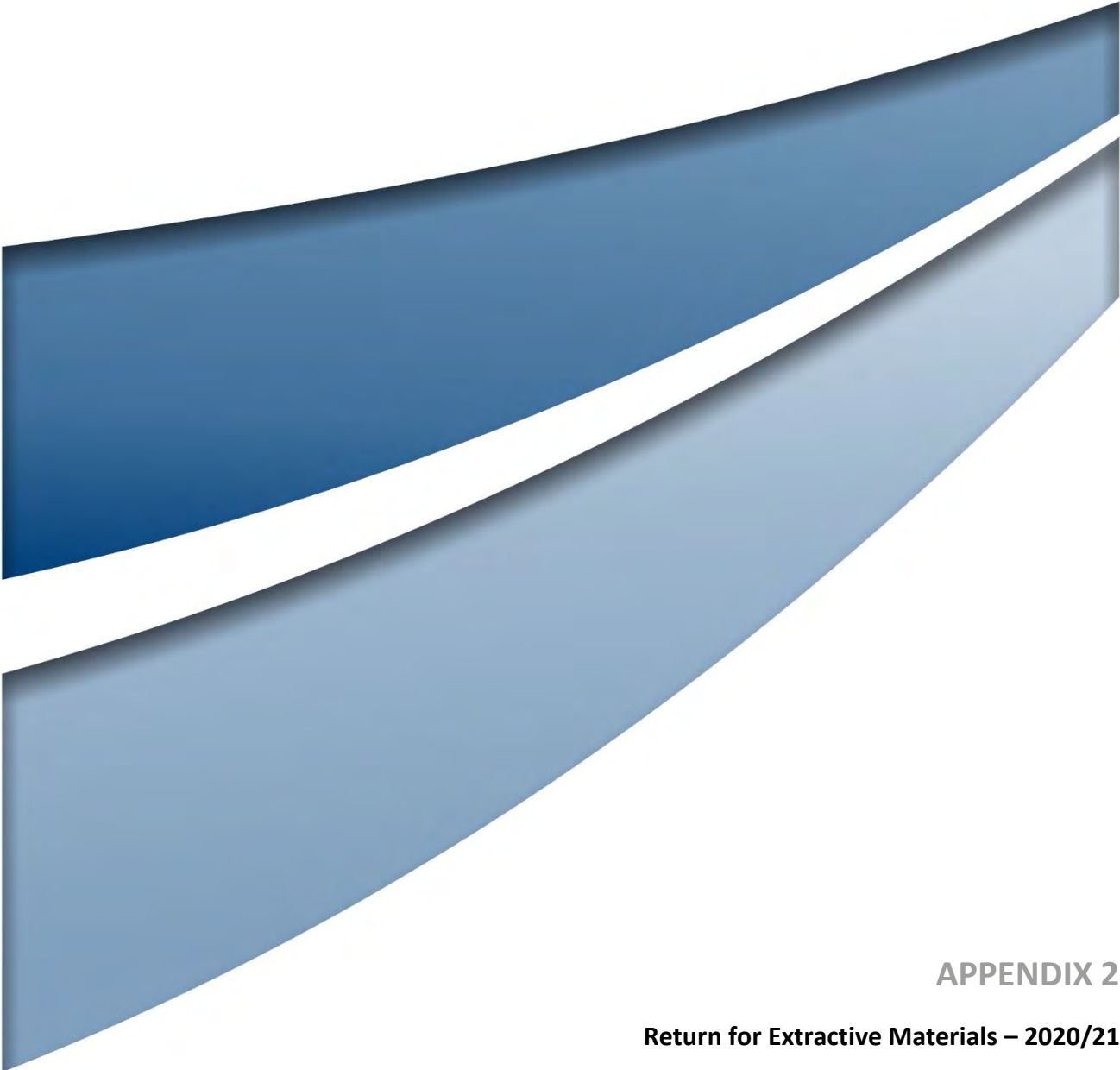
Date source: Welfer Quarries (2019), NSW LPI DBOB (2019)

Figure 3: Conceptual final landform

**APPENDIX 3
INCIDENT NOTIFICATION AND REPORTING REQUIREMENTS**

WRITTEN INCIDENT NOTIFICATION REQUIREMENTS

1. A written incident notification addressing the requirements set out below must be emailed to the Department at the following address: compliance@planning.nsw.gov.au within seven days after the Applicant becomes aware of an incident. Notification is required to be given under this condition even if the Applicant fails to give the notification required under condition 9 of Schedule 5 or, having given such notification, subsequently forms the view that an incident has not occurred.
2. Written notification of an incident must:
 - (a) identify the development and application number,
 - (b) provide details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident);
 - (c) identify how the incident was detected;
 - (d) identify when the Applicant became aware of the incident;
 - (e) identify any actual or potential non-compliance with the conditions of this consent;
 - (f) describe what immediate steps were taken in relation to the incident;
 - (g) identify further action(s) that will be taken in relation to the incident; and
 - (h) identify a project contact for further communication regarding the incident.
3. Within 30 days of the date on which the incident occurred or as otherwise agreed to by the Secretary, the Applicant must provide the Secretary and any relevant public authorities (as determined by the Secretary) with a detailed report on the incident addressing all requirements below, and such further reports as may be requested.
4. The Incident Report must include:
 - (a) a summary of the incident;
 - (b) outcomes of an incident investigation, including identification of the cause of the incident;
 - (c) details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence; and
 - (d) details of any communication with other stakeholders regarding the incident.



APPENDIX 2

Return for Extractive Materials – 2020/21

Extractive Materials Return

2020-2021



Regional
NSW

Form S1 – Period Ending 30 June 2021

Quote RIMS ID in all correspondence

Quarry Id: 133991110 Operators Name: WALKER QUARRIES PTY LTD Address: PO BOX 115 WALLERAWANG NSW 2845 Email: accounts@walkerquarries.com.au Quarry Name: WALLERAWANG QUARRY Quarry Address: LOT 6, GREAT WESTERN HWY, WALLERAWANG NSW 2845	Rims ID: 401163	Inquiries please telephone: (02) 4063 6713 Completed or Nil Returns Email – mineral.royalty@planning.nsw.gov.au Postal Address (see below)
<i>Please amend name, postal address and location of mine or quarry if incorrect or incomplete.</i>		

The return should be completed and forwarded to **Senior Advisory Officer, RESOURCE ECONOMICS, STRATEGY, PERFORMANCE & INDUSTRY DEVELOPMENT, DEPARTMENT OF REGIONAL NSW, PO BOX 344 HUNTER REGION MAIL CENTRE NSW 2310 on or before 31 October 2021.** If completion of the return is unavoidably delayed, an application for extension of time should be requested **before** the due date. If no work was done during the year, a **NIL** return must be forwarded.

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

Director, Resources Policy

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

Typical Geology Quartzite (Mineral Group 2)

Nearest Town to Quarry Wallerawang

Local Council Name Lithgow City Council

Deposited Plan and Lot Number/s of Quarry Sitegoal P/L (Lot 7/ DP 872230), State Forest (Lot 7071/ DP1201227), Crown Land (Lot 7322/DP1149335)

Email Address of Operator accounts@walkerquarries.com.au

Name of Owner or Licensee Walker Quarries Pty Ltd

Postal Address of Licensee PO Box 115, Wallerawang NSW 2845

Licence/Lease Number/s (if any)

From Mining, Exploration & Geoscience (NSW Mineral Resources) ML1633

From Crown Lands or other NSW Department NA

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

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

- SIGNATURE of PROPRIETOR or MANAGER W. Chapman DATE 29/9/21
- CONTACT PERSON for this return Accounts
- NAME (Block letters) EMILY HONEYSETT Telephone 02 6324 4066

Extractive Materials Return

2020-2021



Regional
NSW

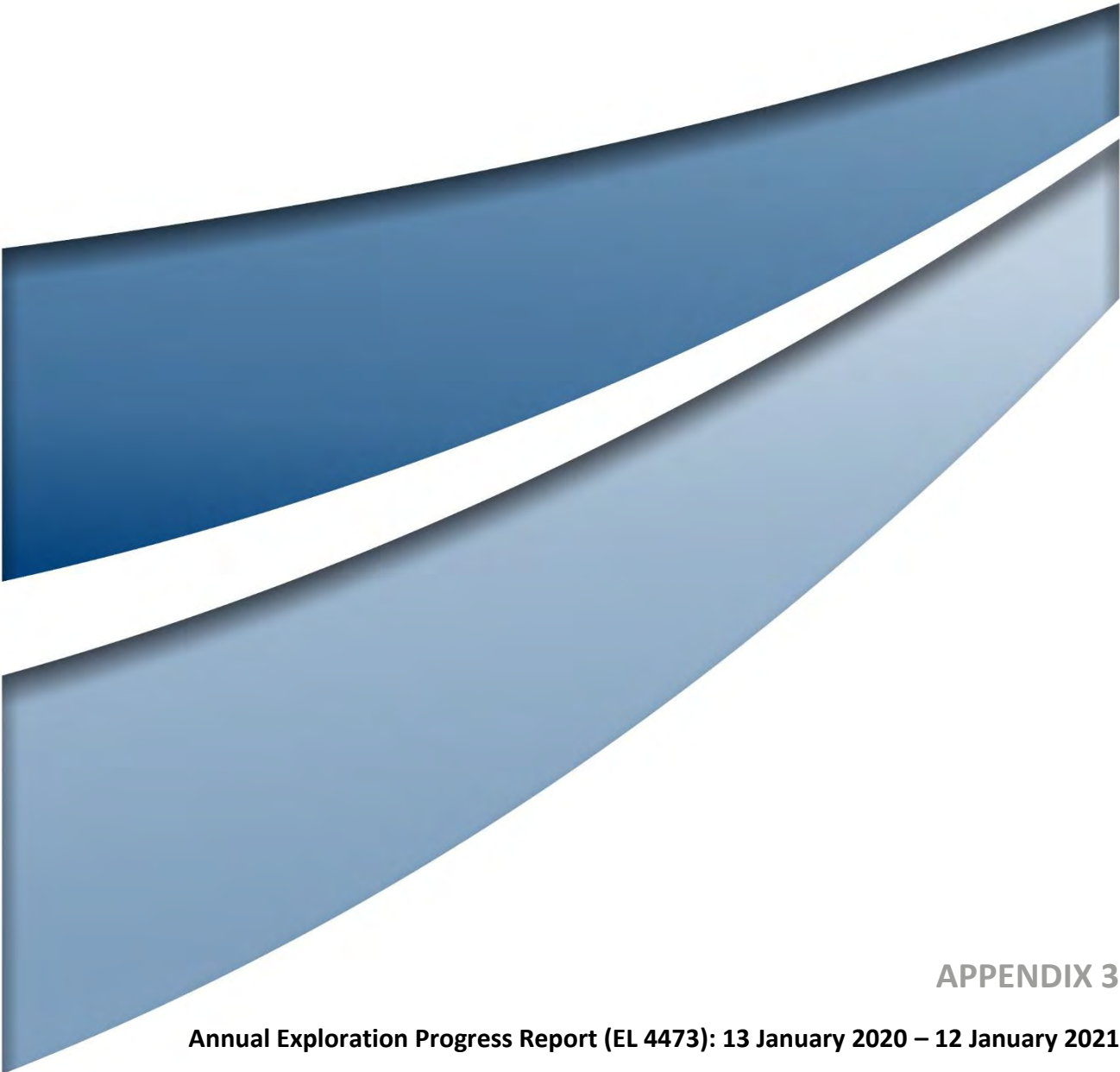
Form S1 – Period Ending 30 June 2021

Sales During 2020-2021

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

Product	Description	Quantity Tonnes
Virgin Materials		
Crushed Coarse Aggregates		
Over 75mm	Armour Rock & Gabion	12038.61
Over 30mm to 75mm	Ballast & 40/10mm Aggregate	7509.75
5mm to 30mm	5, 7, 10, 14, 20, 10/7 & 20/10mm aggregates	101927.40
Under 5mm		
Natural Sand		
Manufactured Sand	Coarse, Fine and Fill Sand	50,619.18
Prepared Road Base & Sub Base	DGB20, DGS20, DGS40 and road base	4,627.78
Other Unprocessed Materials		
Recycled Materials		
Crushed Coarse Aggregates		
Over 75mm		
Over 30mm to 75mm		
5mm to 30mm		
Under 5mm		
Natural Sand		
Manufactured Sand		
Prepared Road Base & Sub Base		
Other Unprocessed Materials		
River Gravel		
Over 30mm	Pebbles	89.26
5mm to 30mm		
Under 5mm		
Construction Sand	Excluding Industrial	
Industrial Sand		
Foundry, Moulding		
Glass		
Other (Specify)		
Dimension Stone	Building, Ornamental, Monumental	
Quarried in Blocks		
Quarried in Slabs		
Decorative Aggregate	Including Terrazzo	
Loam	Soil for Topdressing, Garden soil, Horticultural purposes)	
TOTAL SITE PRODUCTION		217812.00
Gross Value (\$) of all Sales		
Type of Material		
Number of Full-Time Equivalent (FTE) Employees	Employees 16	Contractors N/A

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



APPENDIX 3

Annual Exploration Progress Report (EL 4473): 13 January 2020 – 12 January 2021

9.0 REFERENCES

- Pogson, D. J., and Watkins, J. J. (1998): Bathurst geological sheet 1:250 000, Sydney, Australia, Geological Survey of New South Wales, Department of Mineral Resources, 430 p.
- Ingpen, I. (1997): Sitegoal Pty. Ltd. Wallerawang August 1997. Etheridge Henley Williams report (unpublished).
- Ingpen, I. (1999): Sitegoal Pty. Ltd. Wallerawang Silica Project EL 4473 Wallerawang Annual Report, July 1999. Red Hill Geoscience report (unpublished).
- Stone, C. (2007): Memo to Gemac Services, EL 4473 - 2006 Quartzite Mapping. Rangott Mineral Exploration Pty. Ltd. memo (unpublished).
- Ross, E. J. A. (2014): Twenty-First Annual Exploration Progress Report for Exploration Licence No. 4473 'Wallerawang' for the period ending 11th January, 2014. *Annual Report to the NSW Department of Trade, Industry, Regional Infrastructure and Services, Division of Resources and Energy by Rangott Mineral Exploration Pty. Ltd. on behalf of Sitegoal Pty. Ltd.*
- Eastwood, A. (2018): Twenty-Fifth Annual Exploration Progress Report for Exploration Licence No. 4473 'Wallerawang' for the period ending 11th January, 2018. *Annual Report to the NSW Department of Trade, Industry, Regional Infrastructure and Services, Division of Resources and Energy by Rangott Mineral Exploration Pty. Ltd. on behalf of Sitegoal Pty. Ltd.*
- Coleman, D. (2018): Ninth Annual Report for ML1633 Wallerawang for the period 15 July 2017 to 15 July 2018. *Annual Report to the NSW Department of Planning and Environment, Division of Resources and Geosciences, by Rangott Mineral Exploration Pty Ltd on behalf of Walker Quarries Pty Ltd.*
- Coleman, D. (2020): Annual Exploration Progress Report for Exploration Licence No. 4473 'Wallerawang' for the period 13 January 2019 to 12 January 2020. *Annual Report to the NSW Planning, Division of Resources and Energy by Rangott Mineral Exploration Pty Ltd on behalf of Sitegoal Pty Ltd.*

RANGOTT MINERAL EXPLORATION PTY LTD

ACN 002 536 825

for

SITEGOAL PTY LTD

ABN 66 052 317 503

The Operator and Holder of

EXPLORATION LICENCE No. 4473

“WALLERAWANG”

Grant Date: 12 January 1993

Renewal Date: 26 June 2017

Expiry Date: 12 January 2023

ANNUAL EXPLORATION PROGRESS REPORT

for the period

13 January 2020 to 12 January 2021

This report accurately discloses the nature, extent, timing, results, geological interpretation and expenditure of the exploration conducted during the reporting period.



Technical Manager:

M.F. Rangott, Principal Geologist
Rangott Mineral Exploration Pty Ltd
Tel: 02-6362 5155

Author:



David Coleman, Senior Consulting Geologist
Rangott Mineral Exploration Pty Ltd
P.O. Box 1141, Orange, NSW
Tel: 02-6362 5155
February 2021

Distribution:

EROL – Geological Survey of NSW MEG
Copy 1 - Sitegoal Pty Ltd
Copy 2 - Rangott Mineral Exploration Pty Ltd

EXECUTIVE SUMMARY

Exploration Licence 4473 'Wallerawang' was taken out to explore an area northwest of Lithgow for hard rock types suitable for use as construction aggregate. In April 2014, an extensive blast drilling program was undertaken to determine the top and bottom lithological boundaries of a mapped quartzite unit. Subsequently a quarry was established (Wallerawang Quarry) by Walker Quarries Pty Ltd (a subsidiary company) within Mining Lease 1633, located in the central part of the EL 4473 area. Renewal of EL 4473 was granted on 26 June 2017 for a five-year term ending 12 January 2023.

Exploration work carried out during the reporting period included land access negotiations with Forestry Corporation of NSW, a review of published geology maps & historic geological reports and desktop geological interpretation. Geological reconnaissance mapping was also undertaken within Lidsdale State Forest and along public roads to the north of the licence area in order to determine the extent of Permian marine conglomerates in the area.

MAP REFERENCES

• Sydney	SI 56	1:1,000,000
• Sydney Special	SI 56-05	1:250,000
• Wallerawang	8931	1:100,000
• Lithgow	8931-3-S	1:25,000

KEY WORDS

Wallerawang, Cox's River, Devonian, Permian, Carboniferous, Shoalhaven Group, hornfels, quartzite, skarn, Rydal Syncline, Lambie Group, Bathurst Granite, Hoskins Quarry, aggregate, road base.

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1.0 INTRODUCTION

EL 4473 was taken out to assess the potential of the basement lithologies in the area for material suitable for construction aggregate. Specific end-uses envisaged include railway ballast, aggregate for concrete making, ground stabilisation, road-base, and aggregate and dust for bedding of pipes and infrastructure. The presence of high-purity quartzite horizons within the licence area also indicates potential for material that may be suitable for use as flux in the steelmaking industry.

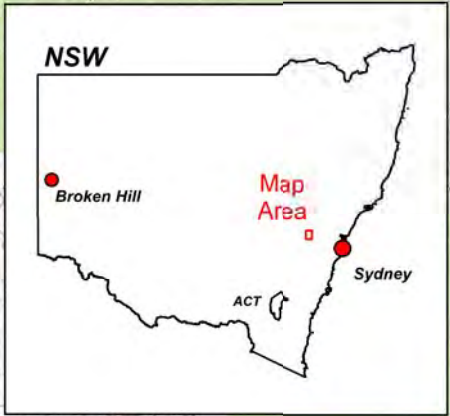
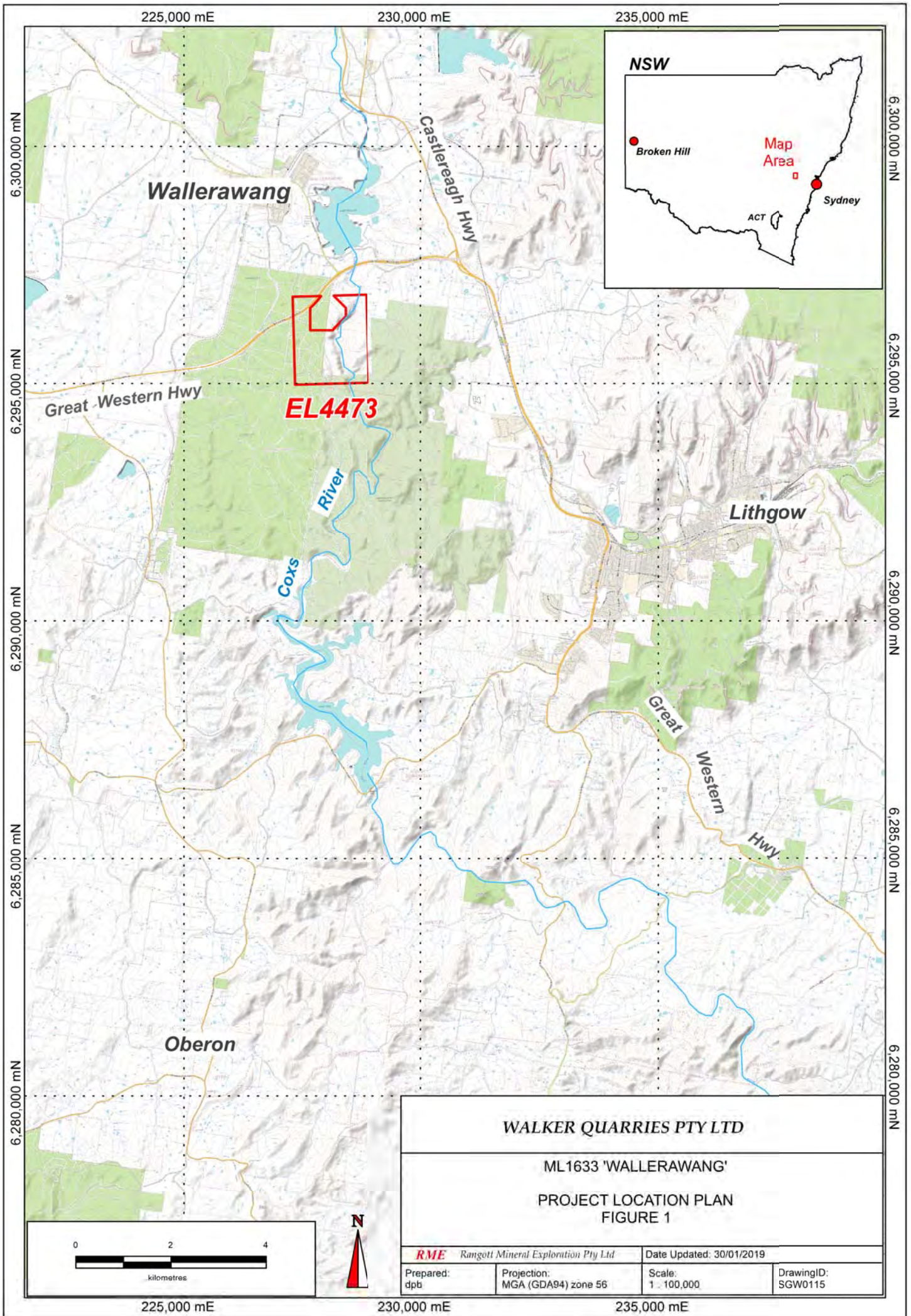
2.0 LOCATION and ACCESS

The licence covers an area of approximately 3km², and is located 3km south of the village of Wallerawang and 8km northwest of the town of Lithgow in eastern New South Wales (see **Figure 1**), approximately 115km west-northwest of Sydney. Access to EL 4473 is afforded by the sealed Great Western Highway, which passes through the northwest corner of the licence (**Figure 2**), and a collection of unsealed State Forest roads and four-wheel-drive tracks which bisect the licence area to the west of the Cox's River. The eastern portion of the licence area can be accessed on foot from the western side of the river.

Topography within the licence area varies from undulating cleared farmland and plantation pine forest in the west to steep rocky hills and ridges covered in open eucalypt forest and stunted shrubs and grassland in the eastern portion. Local relief ranges from 30m to 40m in the west to more than 200m adjacent to the deeply incised Cox's River. Soil profiles tend to be poorly developed where underlain by metamorphosed lithologies and Carboniferous granitoids, becoming thicker and more clay-rich where underlain by less metamorphosed sedimentary lithologies.

3.0 GEOLOGY

The tenement occupies an area largely underlain by the Capertee Subprovince of the Hill End Trough within the eastern exposed portion of the Lachlan Orogen of New South Wales. The Hill End Trough is a broadly north-south trending Siluro-Devonian rift system in which shelf and deep water sedimentary and volcanic sequences were deposited in the late Silurian and Early Devonian, being succeeded by shallower marine to fluvial sequences of the Lambie Shelf following tectonic activity which terminated sedimentation in the Hill End Trough (Pogson



EL4473

WALKER QUARRIES PTY LTD

ML1633 'WALLERAWANG'

PROJECT LOCATION PLAN
FIGURE 1

RME Rangott Mineral Exploration Pty Ltd		Date Updated: 30/01/2019	
Prepared: dpb	Projection: MGA (GDA94) zone 56	Scale: 1 : 100,000	DrawingID: SGW0115

& Watkins, 1998). In the Wallerawang area, these sequences are intruded by Carboniferous granitoids of the Bathurst Batholith, and un-conformably overlain by members of the Permian Shoalhaven Group, a part of the Sydney Basin sequence.

Outcropping lithologies within EL 4473 are dominated by variably metamorphosed and silicified sandstones, siltstones and mudstones of the Late Devonian Lambie Group, which occupy the eastern limb of the Rydal Syncline, the core of which lies approximately 3km to the west of the licence area. The Lambie Group consists of fine quartzose sandstone and siltstone of shallow marine origin, overlain by outwash fan lithic conglomerate, and low-energy fluvial sequences of red mudstone, siltstone and sandstone. The majority of information on these units is derived from exposures on the Bathurst 1:250,000 geological sheet, but previous work has correlated the strata of this unit exposed within the licence area with the Gibbons Creek Sandstone, which occurs at the base of the Lambie Group (Ingpen, 1999), and is inferred to have been deposited in a shallow marine (nearshore) setting (Pogson & Watkins, 1998). The Gibbons Creek Sandstone is noted elsewhere as consisting of white to grey fine- to medium-grained quartz-rich sandstone, with the top of the formation consisting of thinly bedded, very fine-grained dark grey to black sandstone and siltstone and lesser mudstone, with narrow pebbly horizons in places.

Unnamed phases of the Carboniferous Bathurst Batholith, which outcrop extensively in the adjacent Bathurst 1:250,000 geological sheet, underlie and intrude the Lambie Group sediments throughout the area. The granitoids observed in the licence area (possibly correlatable with the Tarana Granite phase), are commonly medium-grained in-equigranular to megacrystic in texture, and composed of K-feldspar, quartz, biotite, and lesser plagioclase. The granitic lithologies observed are inferred to be the source of the heat and hydrothermal fluids responsible for the metamorphism of the surrounding sedimentary sequences.

Un-conformably overlying the Lambie Group and the Carboniferous intrusives in the area are irregular discontinuous exposures of relatively flat-lying weathered pebble to cobble conglomerates, lithic sandstones, and micaceous siltstones and (?)tillites of the Permian Shoalhaven Group, the lowest portion of the Sydney Basin sequence. Subdivision of these units within the licence area is not possible due to their poorly preserved and limited exposures, but based on the sedimentary facies present, it is inferred that they represent portions of the fluvial to shallow marine Snapper Point Formation, and the deeper marine Berry Siltstone. Interpretation of these units is further complicated by the presence in the basal conglomerates of the Shoalhaven Group of basement-derived metasedimentary clasts ("drop stones"), resistant to weathering, resulting in the outcrops of these units appearing to be recent

reworked deposits of the underlying Lambie Group. The Snapper Point Formation is well exposed in a roadside cutting of the Great Western Highway adjacent to the Wallerawang Quarry, and has been mapped in the far northeast corners of the ML 1633 and the adjacent part of EL 4473.

The published structural histories of the geological units exposed in the area surrounding EL 4473 largely document pre-Permian deformation. A series of broad north-south trending folds occur in the Mt Lambie area, the largest of which is the Rydal Syncline, centred to the west of EL 4473. The development of these folds/synclines is inferred to be related to deformation in the Carboniferous, predating or synchronous with the intrusion of volumetrically significant granites of the Bathurst Batholith.

4.0 TENURE and PREVIOUS EXPLORATION

Exploration licence No. 4473 was granted to the applicant, Terrance Campbell on 12 January, 1993 for Group 2 Minerals for an initial two-year period, covering an area of one graticular unit as shown in **Table 1**.

Table 1: Blocks and units

Name of Map Sheet (1:1,000,000)	Block Number	Units
Sydney	1225	k

As the licence was granted to an individual, there was no expenditure commitment for the term of the licence. During this period, the title of the licence was passed to Sitegoal Pty Ltd and as such the working requirement for the licence was set at \$5,000 per annum.

The licence was renewed over the same one unit area in January 1995, 1998, 2000, 2002, 2004, 2006, 2008, 2010 and 2017.

An application to renew the licence for a further five year period was lodged with the Department of Resources & Geoscience in June 2017, resulting in the licence being renewed for a further five year period, expiring on 12 January 2023. At this point, EL 4473 became an

IMER title with changed reporting requirements. According to the approved Work Program for EL 4473, the proposed exploration expenditure for years 2 to 6 is \$6000 per year.

Previous exploration prior to title grant was mainly for granite as a dimension stone product, and is documented in previous annual reports. Limited information is available at present on exploration activities conducted by Sitegoal Pty Ltd prior to 1996, with most information being drawn from significantly later annual reports.

Following granting of EL 4473 in 1993, initial exploration work included reconnaissance mapping in that portion of the licence on the western side of the Cox's River, adjacent to an existing small quarry (Hoskins Quarry - Ingpen, 1999 - now within the ML 1633 Lease area), which resulted in the identification of a number of exposed metasedimentary horizons with similarities to those being extracted in the Marrangaroo Quarry approximately 3km to the southeast in the same geological unit. Identification of some of these units as relatively clean silica-rich quartzites prompted limited surface geochemical sampling, which returned relatively high silica concentrations (>90% SiO₂). Geological mapping of portions of the licence area was carried out by consulting geoscientists Etheridge Henley and Williams to follow up on areas of high silica assays, resulting in the identification of nine potentially quartzite-bearing exposures, (named 'A' through 'I').

During 1997, three diamond drillholes were completed within the western portion of the licence to evaluate the down-dip continuity of the quartzite horizons identified and to evaluate the silica content of the horizons to assess their suitability for extraction for metallurgical purposes (Ingpen, 1997). Interpretation of the drilling results was aimed at determining the further work required to delineate an extractable silica resource within the quartzite horizons. Of the three drillholes, only one intersected any intervals with high silica contents. SIWD002 intersected significant quartzite, with 29.3 metres averaging 92.05% SiO₂ from approximately 38 metres downhole to end of hole. Based on the results of the drilling, a *non-JORC compliant* resource of 1.84 Mt of quartzite material was assumed around SIWD002, while the areas around the other two holes were considered not to be prospective for a metallurgical quartzite resource.

Initial rock chip sampling of exposed quartzite units to the east of the Cox's River returned only moderate silica concentrations, resulting in the recommendation that further exploration work be concentrated around known quartzite occurrences close to drillhole SIWD002.

A further two diamond drillholes were completed during 1999, designed to intersect the silica-rich quartzite horizons observed at surface and at depth in drillhole SIWD002. Drillhole

SIWD004 intersected two quartzite horizons, with best results of 17.06 metres at 85.19% SiO₂ from 46.25 metres down-hole. The presence of elevated concentrations of deleterious elements within the quartzite unit largely precluded its use in high-purity end products, however it was still considered prospective for use as aggregate. Drillhole SIWD005 intersected a broad zone of quartzite returning a result of 45.31 metres at 94.88% SiO₂ from 16.45 metres down-hole. Red Hill Geoscience used this result and the results from SIWD002 to define a *non-JORC compliant* resource of 3.26 Mt of high-grade quartzite material, assuming constant dip and thickness of the quartzite horizon, and continuity between holes (Ingpen, 1999).

In addition to drilling, geochemical sampling of the basal conglomerate horizon of the Permian Shoalhaven Group was undertaken to assess the potential of this horizon as a source of high-grade silica (Ingpen, 1999), analogous to the Glenella deposit near Cowra, New South Wales. The silica contents of the conglomerate pebbles was found to range from 83.8% to 89.9% SiO₂, which was significantly lower than that of the in-situ quartzite units, and as such, the prospectivity of this unit was downgraded.

In 2006, at the request of Gemac Services Pty Ltd, consultant geologist Chris Stone of Rangott Mineral Exploration Pty Ltd ("RME") conducted detailed geological mapping of the areas previously identified as being prospective for quartzite occurrences. Mapping encountered a series of metamorphosed sedimentary lithologies of shaley to sandy composition (Stone, 2007). Classifications of these lithologies lead to four field terms for rock-types, which could be correlated along strike:

- Sugary Quartzite - metasomatised quartz sandstone;
- Hornfels - metamorphosed arenaceous and argillaceous beds - commonly banded, massive elsewhere;
- Shale - weakly metamorphosed pelitic units; and
- Undifferentiated Metasediments - weakly metamorphosed and of variable composition.

The RME mapping resulted in the observation that the areas of 'quartzite' identified by Etheridge Henley and Williams actually encompassed resistant lithologies with varying compositions, striking north-northwest, and dipping 40-60° to the west. A number of the zones were interpreted to be parts of common resistant beds or horizons, of which only two fell within lithological units accurately termed sugary quartzites (and likely to host high-purity silica), the remainder being silica-rich (but lower purity) hornfels and shale horizons. Exposures of the sugary quartzite were found to form elongate spurs and strike-elongate hogback outcrops

adjacent to the Cox's River (Stone, 2007). In the southern section of the tenement the sugary quartzite unit was inferred to bifurcate into two separate horizons. Also mapped, but not commented on in reporting were discrete areas of weathered cobble conglomerate, interpreted as being Permian in age (Shoalhaven Group).

ML 1633 was granted on 15 July 2009 for an initial 10 year period in an area immediately surrounding the existing Hoskins Quarry and the high-purity silica intersections of the sugary quartzite unit in drillholes SIWD002 and SIWD005.

Following the granting of ML 1633, exploration has recommenced within EL 4473, the objective being to more precisely delineate the main quartzite unit within EL 4473 and south of ML 1633, and to assess the extent and quality of the rock present within the quartzite and other metasediment units on the western side of the Cox's River.

During the 2013 - 2014 reporting period, detailed mapping of the 'Banded Hornfels' unit was undertaken. This unit had been identified as a potential source of aggregate or aggregate-like products. A better understanding of the presence and distribution of deleterious material within the unit was established. The distribution of samples exhibiting sulphides appeared to have no direct correlation with the intrusive granite. However, there did appear to be a moderate correlation between the distributions of sulphides with increasing proximity to the shale.

Additional discoveries included two shallow old workings and minor rusted machinery relics in the northeast of ML 1633. The workings appeared to have targeted quartzite. The workings lie along strike from a number of other quartzite outcrops. It was understood to represent an additional quartzite unit.

Exploration completed during the 2017 – 2018 reporting period comprised the drilling of 35m of HQ diameter diamond drill core (from 85m to 119.65m (EOH) in hole WQDD005) into the EL 4473 area at depth, the hole being collared within the eastern boundary of ML 1633. The drilling was part of a 5-hole, 534m diamond drilling program designed to test the suitability of previously mapped, indurated rock types for quarrying products such as aggregate. Most of the drilling occurred within the ML 1633 area, close to the current extraction pit. WQDD005 was planned to test the Lambie Group metamorphosed units all the way east to their contact with the granite at depth. Other work comprised geological and geotechnical logging of the drillcore, and the preparation of a global JORC-compliant resource estimate.

Drillhole WQDD005 intersected metamorphosed units of the Lambie Group, and their contact with the Carboniferous granite, as expected. The rock types intersected were variably skarn-mineralised hornfels rocks – mainly cordierite-biotite hornfels with retrograde replacement caused by close proximity to the granite, and a coarse-grained pink plagioclase-Kspar-biotite-hornblende-quartz granite from 118m onwards. In addition, thin-diopsidic and garnetiferous calc-silicate bands were intersected within the hornfels, which contained relict bedding. From 90m onwards, due to proximity to the granite contact, irregular zones of silica flooding, increased levels of disseminated pyrite and molybdenite (up to 0.3% pyrite per metre), greisen bands and granitic dykes are present.

Parts of the intersected hornfels on EL 4473 were included in a much larger resources study for the adjacent ML 1633 area. This resources study and resource estimate was included in the 2017 – 2018 Annual Report for ML 1633.

Exploration work carried out during the 2018 – 2019 reporting period comprised a thorough review and compilation of previous exploration reports and historic geological information relating to EL 4473. Geological reconnaissance along the southern boundary of ML 1633 and into EL 4473 was also undertaken to determine suitable locations for the drilling of water monitoring bores for the Wallerawang Quarry. This reconnaissance work was focussed on finding evidence of fracturing in rock outcrops along an interpreted fault line trending from drill holes WQDD002 and WQDD003 in ML 1633 southwards into EL 4473.

Exploration work carried out during the 2019 – 2020 reporting period was focussed on administrative requirements but also included landholder liaison and land access negotiations with Forestry Corporation of NSW.

ML1633 was recently renewed for a further 21 year period and expires on 15 July 2040.

5.0 EXPLORATION RATIONALE

The title is adjacent to a working quarry – Wallerawang Quarry, held by subsidiary company Walker Quarries Pty Ltd. The exploration licence was taken out to explore for areas of hard rock – quartzite and hornfelsed sedimentary and volcanic rocks indurated by an adjacent granite intrusion - that are suitable for quarrying. Exploration successfully led to the development of the quarry. The aim is to identify and quantify further resources for future quarry development.

6.0 EXPLORATION WORK COMPLETED in REPORTING PERIOD

Exploration work carried out during the reporting period included a review of published geology maps & historic geological reports and desktop geological interpretation. Sitegoal Pty Ltd also undertook land access negotiations with Forestry Corporation of NSW and finalised a Level 1 Forest Permit to allow access to undertake preliminary exploration activities including geological mapping within Lidsdale State Forest.

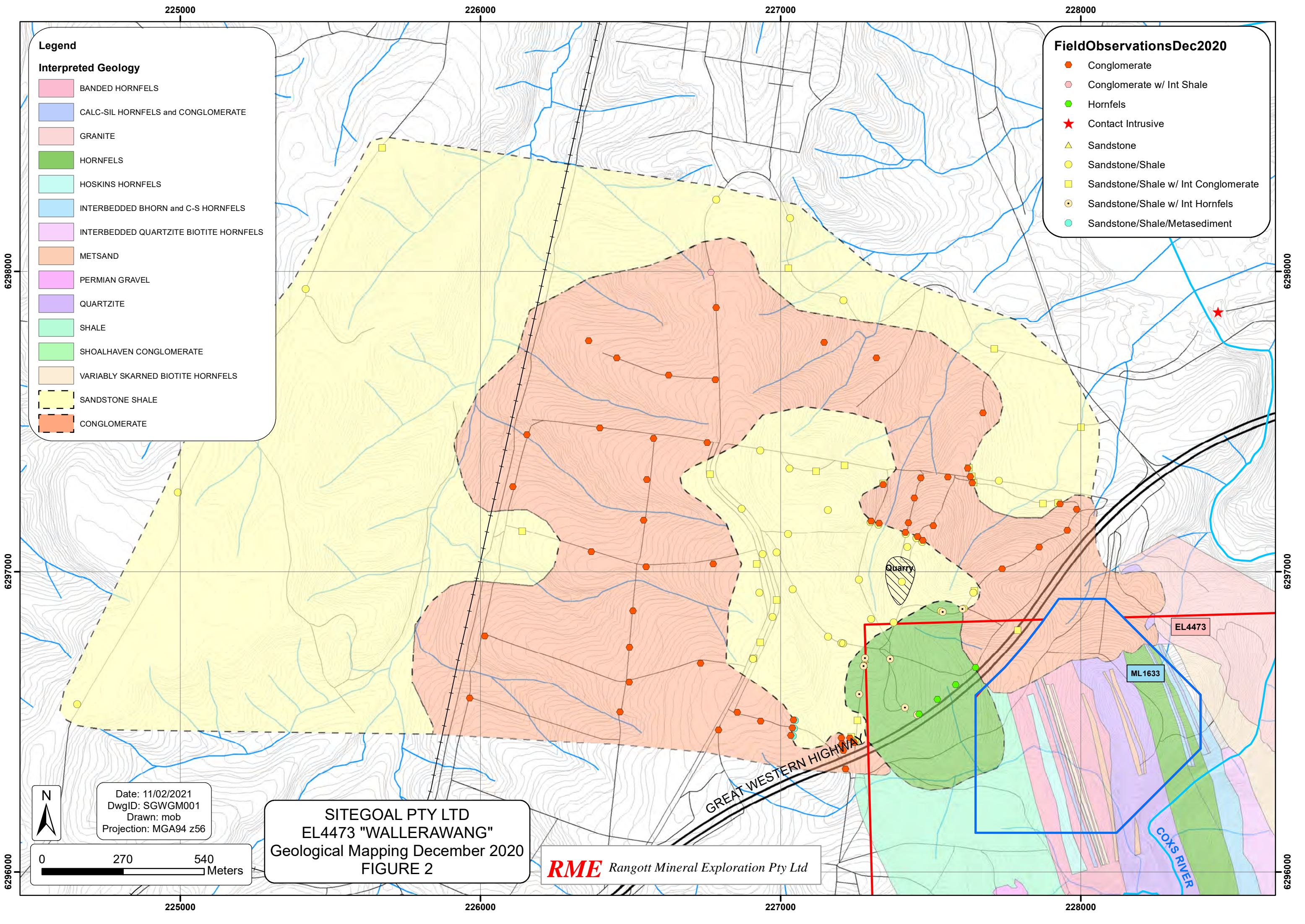
Geological reconnaissance mapping was undertaken within Lidsdale State Forest and along public roads to the north of the licence area in order to determine the extent of Permian marine conglomerates in the area (see **Figure 2**).

7.0 EXPENDITURE

Expenditure on EL 4473 in the 2020 – 2021 reporting period is summarised in **Table 2**, below.

Table 2: Exploration Activity and Expenditure Table (13 Jan 2020 to 12 Jan 2021)

Exploration Category	Description of Activity	Quantity	Expenditure \$
Exploration Activities			
Literature & Data Review	Review of published geology maps & historic geological reports & desktop geological mapping		1,126
Authority Management	Exploration reports and tenement management		2,526
Exploration Planning & Logistical Preparation	Planning of geological mapping		1,223
Geological reconnaissance	Geological mapping within Lidsdale State Forest & on public roads		2,834
Community Consultation Activities			
Landholder liaison / negotiations	Ministerial consent & access negotiations with Forestry Corporation of NSW		2,028



Legend

Interpreted Geology

- BANDED HORNFELS
- CALC-SIL HORNFELS and CONGLOMERATE
- GRANITE
- HORNFELS
- HOSKINS HORNFELS
- INTERBEDDED BHORN and C-S HORNFELS
- INTERBEDDED QUARTZITE BIOTITE HORNFELS
- METSAND
- PERMIAN GRAVEL
- QUARTZITE
- SHALE
- SHOALHAVEN CONGLOMERATE
- VARIABLY SKARNED BIOTITE HORNFELS
- SANDSTONE SHALE
- CONGLOMERATE

FieldObservationsDec2020

- Conglomerate
- Conglomerate w/ Int Shale
- Hornfels
- Contact Intrusive
- Sandstone
- Sandstone/Shale
- Sandstone/Shale w/ Int Conglomerate
- Sandstone/Shale w/ Int Hornfels
- Sandstone/Shale/Metasediment

N

Date: 11/02/2021
 DwgID: SGWGM001
 Drawn: mob
 Projection: MGA94 z56

0 270 540 Meters

SITEGOAL PTY LTD
EL4473 "WALLERAWANG"
 Geological Mapping December 2020
FIGURE 2

RME Rangott Mineral Exploration Pty Ltd

Administration & Overheads	Sitegoal		973
		Total	\$10,710

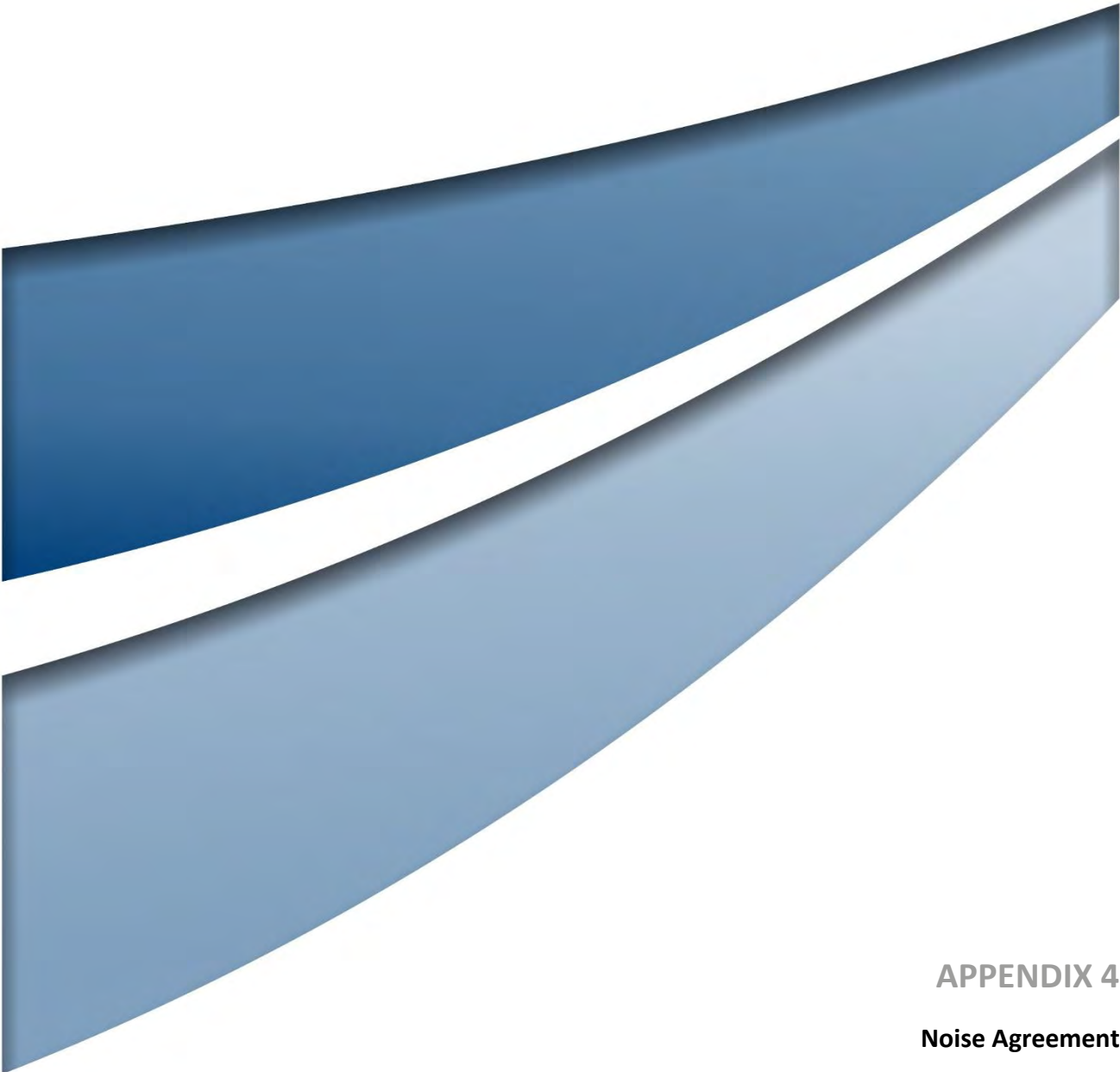
8.0 PROPOSED WORK PROGRAM

The following work is proposed:

- Further geological reconnaissance / mapping to the south of ML 1633 to more accurately delineate the limits of quartzite and indurated metasedimentary rocks.
- Possible shallow percussion drilling to test the continuity and consistency of prospective rock units.
- Geological and geotechnical logging and assessment of drill chip samples from the percussion drilling.

9.0 REFERENCES

- Pogson, D. J., and Watkins, J. J. (1998): Bathurst geological sheet 1:250 000, Sydney, Australia, Geological Survey of New South Wales, Department of Mineral Resources, 430 p.
- Ingpen, I. (1997): Sitegoal Pty. Ltd. Wallerawang August 1997. Etheridge Henley Williams report (unpublished).
- Ingpen, I. (1999): Sitegoal Pty. Ltd. Wallerawang Silica Project EL 4473 Wallerawang Annual Report, July 1999. Red Hill Geoscience report (unpublished).
- Stone, C. (2007): Memo to Gemac Services, EL 4473 - 2006 Quartzite Mapping. Rangott Mineral Exploration Pty. Ltd. memo (unpublished).
- Ross, E. J. A. (2014): Twenty-First Annual Exploration Progress Report for Exploration Licence No. 4473 'Wallerawang' for the period ending 11th January, 2014. *Annual Report to the NSW Department of Trade, Industry, Regional Infrastructure and Services, Division of Resources and Energy by Rangott Mineral Exploration Pty. Ltd. on behalf of Sitegoal Pty. Ltd.*
- Eastwood, A. (2018): Twenty-Fifth Annual Exploration Progress Report for Exploration Licence No. 4473 'Wallerawang' for the period ending 11th January, 2018. *Annual Report to the NSW Department of Trade, Industry, Regional Infrastructure and Services, Division of Resources and Energy by Rangott Mineral Exploration Pty. Ltd. on behalf of Sitegoal Pty. Ltd.*
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APPENDIX 4
Noise Agreement

Walker Quarries
963 Great Western Highway
Wallerawang NSW 2845

8th July 2021

Dear Trevor,
Operations Manager
Walker Quarries

Re: Noise Lot 7 DP87220

As owner of Lot 7 DP87220 since January 2018, I am aware of the operation of the Wallerawang Quarry and am accepting of noise levels on my property which may exceed the limits listed in the Walker Quarries development consent.

I can confirm that the receiver identified as N2 on various quarry management plans is a shed and not a residence.

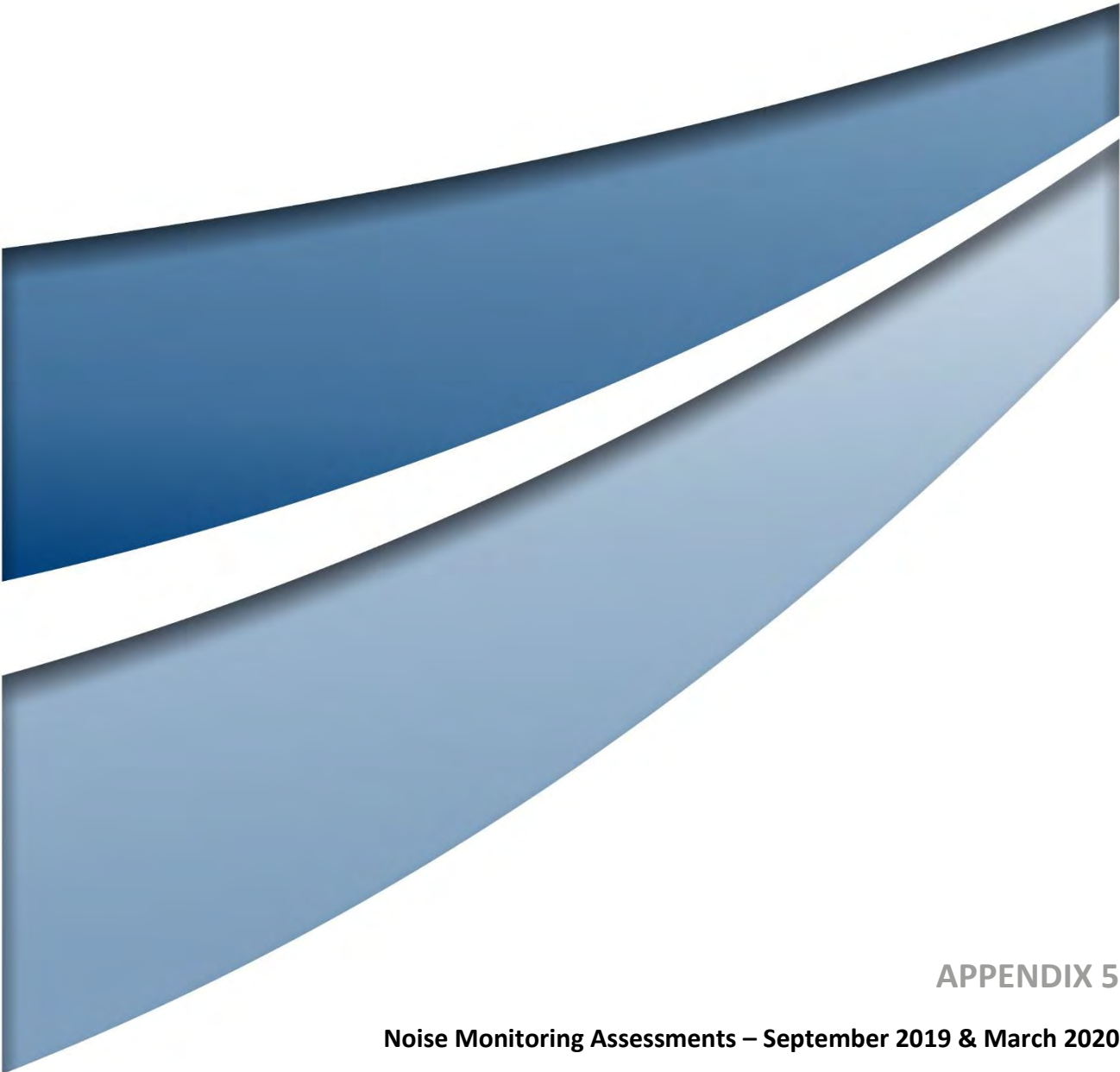
I have been provided with a commitment by Walker Quarries that should noise received on my property become intrusive, or should a residence be built at the location N2 or some other location that I may review my position.

I can confirm this agreement with Walker Quarries has been in place since I took ownership of the property but I have seen no reason to this point to formalise in writing as I am more than happy with the performance of the Quarry."

Yours sincerely



Connor MacRae
93 Whitely Road
Oberon NSW 2787



APPENDIX 5

Noise Monitoring Assessments – September 2019 & March 2020

Noise Monitoring Assessment

Wallerawang Quarry
March 2021



Document Information

Noise Monitoring Assessment

Wallerawang Quarry, March 2021

Prepared for: Walker Quarries Pty Ltd



Prepared by: Muller Acoustic Consulting Pty Ltd

PO Box 678, Kotara NSW 2289

ABN: 36 602 225 132

P: +61 2 4920 1833

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Document ID	Status	Date	Prepared By	Signed	Reviewed By	Signed
MAC160392RP9V1	Final	23 April 2021	Nicholas Shipman		Oliver Muller	

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APPENDIX A – GLOSSARY OF TERMS

APPENDIX B – CORRESPONDENCE REGISTER

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1 Introduction

Muller Acoustic Consulting Pty Ltd (MAC) has been commissioned by Walker Quarries Pty Ltd to complete a bi-annual Noise Monitoring Assessment (NMA) for Wallerawang Quarry ('the quarry'). This assessment has been undertaken as the first bi-annual assessment for 2021.

The NMA involved quantifying the noise contribution of the quarry by direct attended measurements to compare quarry emissions against relevant criteria. Monitoring has been conducted at three representative receiver locations in accordance with the Walker Quarry Noise Management Plan (NMP) and the quarry's Environmental Protection License (ref: 13172). An additional measurement at a nearfield reference location was also conducted to verify the operation of quarry plant and to quantify the noise contribution from site.

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

- NSW Environment Protection Authority (EPA), Noise Policy for Industry (NPI), 2017;
- Environment Protection Licence EPL 13172 (EPL);
- Development Consent 344-1-2001 (Mod 3), February 2020;
- Australian Standard AS 1055:2018 - Acoustics - Description and measurement of environmental noise - General Procedures;
- Muller Acoustic Consulting Pty Ltd, Noise and Vibration Impact Assessment, 2019; and
- Umwelt, Wallerawang Quarry Noise Management Plan (NMP), 2019.

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

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2 Noise Criteria

2.1 Environmental Protection License Noise Limits

Table 1 reproduces the noise criteria for the quarry as per Condition L4.1 of EPL 13172.

Table 1 EPL Noise Limits, dBA			
Location	Day	Evening	Night
	LAeq(15min)	LAeq(15min)	LAeq(15min)
All privately owned residences	43	43	39

Note: Day Period is 7am to 6pm, Evening Period is 6pm to 10pm, Night Period is 10pm to 7am.

It is noted that Condition L4.3 of EPL 13172 identifies conditions under which the noise criteria do not apply and include:

- a) Wind speeds greater than 3m/s at 10m above ground level;
- b) Temperature inversion conditions greater than 3 degrees Celsius / 100m; or
- c) Under “non-significant weather conditions”.

2.2 Development Consent Noise Limits

Schedule 3 of the site’s Development Consent (DA344-11-2001) outlines applicable noise criteria for the operation of the quarry. **Table 2** reproduces the criteria as outlined in the development consent.

Table 2 Development Consent Noise Limits, dBA			
Location	Day	Evening	Night
	LAeq(15min)	LAeq(15min)	LAeq(15min)
All privately owned residences	43	43	35

Additionally, Condition 3B of Schedule 3 of the Development Consent states, ‘*The noise criteria in Table 2 do not apply if the Applicant has an agreement with the owner/s of the relevant residence or land to exceed the noise criteria, and the Applicant has advised the Department in writing of the terms of this agreement.*’

2.3 Variance in noise limits

It is noted that the night-time criteria presented in the Development Consent differs from that outlined in the EPL. This is due to the consent being updated to reflect the recent modification for site. Hence, the more conservative criteria outlined in the consent have been adopted for this assessment. Notwithstanding, as the quarry is not operational during the night period, the variance in the applicable noise criteria is inconsequential.

2.4 Quarry Plant Sound Power Noise Limits

Table 15 of the Noise and Vibration Impact Assessment (NVIA) (Muller Acoustic Consulting, April 2019) prepared for the Environmental Impact Statement (EIS) (Umwelt (Australia)) sets out the noise targets for mobile plant operating at the quarry. The logarithmic site total sound powers are reproduced in **Table 3**.

Table 3 Quarry Plant Sound Power Levels, dBA (re 10⁻¹² Watts)	
Noise Source/Item	Total dBA
Sandvik Crusher	111
Pugmill	108
Service Vehicle	82
Wirtgen Kleeman Secondary/Tertiary Crusher	111
Wirtgen MR130Z Track Mounted Impact Crusher	113
Wirtgen Kleeman Cone/Sand Plant	110
Wirtgen Kleeman Screen	111
Drill	115
Cat D8 Dozer	111
Komatsu PC450 Excavator	109
Komatsu Loader	99
Komatsu WA500 Loader	105
Komatsu WA480 Wheel Loader	100
Komatsu HM400 Articulated Dump Truck (x3)	106
Volvo 6 Wheeled Water Cart	101
Manitou	96
Standard Road Truck (x3)	102
Total Site Sound Power	121

3 Methodology

3.1 Locality

Wallerawang is located approximately 10km to the north west of Lithgow, NSW. Receivers in the locality surrounding the quarry are primarily rural/residential and for consistency the naming conventions for each receiver has been retained from the NMP. The monitoring locations with respect to the quarry are presented in **Table 4** and graphically in the locality plan shown in **Figure 1**.

Table 4 Receiver Locations

ID	Address	Distance to Quarry Boundary
RL1	Reference Location (adjacent to site office)	N/A
N1	139 Gemalong, Marrangaroo, NSW	1200m
N2	987 Great Western Highway, Marrangaroo, NSW	400m
N3	2 Cypress Close, Wallerawang, NSW	550m

3.2 Environmental Noise Assessment Methodology

The attended noise surveys were conducted in general accordance with the procedures described in Australian Standard AS 1055:2018, "Acoustics - Description and Measurement of Environmental Noise", the EPL and NMP. The measurements were carried out using a Svantek Type 1, 971 noise analyser on Wednesday 31 March 2021. The acoustic instrumentation used carries current NATA calibration and complies with AS IEC 61672-2019-Electroacoustics - Sound level meters - Specifications. Calibration of all instrumentation was checked prior to and following measurements. Drift in calibration did not exceed ± 0.5 dBA.




Two daytime measurements of 15-minutes in duration were completed at each monitoring location during standard onsite operations. Where possible, throughout each survey the operator quantified the contribution of each significant noise source. Extraneous noise sources were excluded from the analysis to calculate the $L_{Aeq}(15min)$ quarry noise contribution for comparison against the relevant EPL limits.

FIGURE 1
LOCALITY PLAN
REF: MAC160392

0 200m



KEY

-  N1 RECEIVER/MONITORING LOCATION
-  RL1 REFERENCE LOCATION
-  SITE LOCATION



4 Results

4.1 Assessment Results – Onsite Reference Location (RL1)

Operational attended noise monitoring was completed at RL1 on Wednesday 31 March 2021. **Table 5** presents the monitored noise level contributions and observed meteorological conditions for each measurement.

Table 5 Operator-Attended Noise Survey Results – Reference Location 1 (RL1)							
Date	Time (hrs)	Descriptor (dBA re 20 µPa)			EPL Limit ¹	Meteorology	Comments
		L _{Amax}	L _{Aeq}	L _{A90}			
31/03/2021	13:12	70	60	59	43	WS: 0.1m/s	Quarry Generator 58-62
						WD: SW	Quarry Traffic 62-70
						Rain: Nil	Quarry Pump 58-62
Quarry Site L _{Aeq} (15min) Contribution							62
31/03/2021	14:42	70	64	63	43	WS: 0.3m/s	Quarry Generator 62-64
						WD: W	Quarry Traffic 62-70
						Rain: Nil	Quarry Pump 62-64
Quarry Site L _{Aeq} (15min) Contribution							62

Note 1: EPL not applicable for this onsite reference location.

4.2 Assessment Results – Location N1

Operational attended noise monitoring was completed at N1 on Wednesday 31 March 2021. **Table 6** presents the monitored noise level contributions and observed meteorological conditions for each measurement.

Table 6 Operator-Attended Noise Survey Results – Location N1							
Date	Time (hrs)	Descriptor (dBA re 20 µPa)			EPL Limit	Meteorology	Comments
		L _{Amax}	L _{Aeq}	L _{A90}			
31/03/2021	11:24	63	50	43	43	WS: 0.1m/s	Traffic 40-63
						WD: SW	Birds 40-48
						Rain: Nil	Quarry Inaudible
Quarry Site L _{Aeq} (15min) Contribution							<43
31/03/2021	14:00	62	47	41	43	WS: 0.2m/s	Traffic 42-62
						WD: NW	Aircraft 47-56
						Rain: Nil	Birds 42-46
Quarry Site L _{Aeq} (15min) Contribution							<43

Note 1: Quarry Site L_{Aeq}(15min) calculated based on nearfield measurements.

4.3 Assessment Results – Location N2

Operational attended noise monitoring was completed at N2 on Wednesday 31 March 2021. **Table 7** presents the monitored noise level contributions and observed meteorological conditions for each measurement.

Table 7 Operator-Attended Noise Survey Results – Location N2							
Date	Time (hrs)	Descriptor (dBA re 20 µPa)			EPL Limit	Meteorology	Comments
		L _{Amax}	L _{Aeq}	L _{A90}			
31/03/2021	13:34	63	53	48	43	WS: 0.5m/s WD: W Rain: Nil	Quarry screening plant 48-63 Wind in trees <51
Quarry Site L _{Aeq} (15min) Contribution							53
31/03/2021	15:04	62	45	42	43	WS: 0.4m/s WD: W Rain: Nil	Birds 40-52 Traffic 40-62 Screen Plant 46-51
Quarry Site L _{Aeq} (15min) Contribution							48

Note 1: Quarry Site L_{Aeq}(15min) calculated based on nearfield measurements.

4.4 Assessment Results – Location N3

Operational attended noise monitoring was completed at N3 on Wednesday 31 March 2021. **Table 8** presents the monitored noise level contributions and observed meteorological conditions for each measurement.

Table 8 Operator-Attended Noise Survey Results – Location N3							
Date	Time (hrs)	Descriptor (dBA re 20 µPa)			EPL Limit	Meteorology	Comments
		L _{Amax}	L _{Aeq}	L _{A90}			
31/03/2021	11:44	62	49	42	43	WS: 0.1m/s WD: SW Rain: Nil	Traffic 38-62 Birds 38-42 Local residential noise 38-44 Quarry Inaudible
Quarry Site L _{Aeq} (15min) Contribution							<25
31/03/2021	14:20	64	50	46	43	WS: 0.3m/s WD: WNW Rain: Nil	Traffic 44-64 Birds 44-48 Local residential noise 44-58 Quarry Inaudible
Quarry Site L _{Aeq} (15min) Contribution							<25

Note 1: Quarry Site L_{Aeq}(15min) calculated based on nearfield measurements.

4.5 Sound Power Audit Results

Sound power calculations for measured on-site plant are presented in **Table 9**. Results of the analysis identify that the overall sound power of items of plant used at the project site are below target sound power levels outlined in the EIS and NVIA.

Table 9 Sound Power Levels, dBA												
Plant	Octave Band Centre Frequency, Lw Spectrum									Sound Power Lw	Criteria	
	32	63	125	250	500	1k	2k	4k	8k			
Komatsu WA480 FEL	70	80	84	87	89	92	91	84	71	97	100	
Komatsu MH400 #1	70	78	81	84	89	92	88	83	72	96	106	
Komatsu MH400 #2	69	79	82	87	91	94	91	85	74	98	106	
Screen and Crusher	88	96	102	103	112	114	114	110	100	119	111	
Komatsu PC450 LC Ex 201	83	89	93	94	98	100	98	93	83	105	109	
Komatsu PC450 LC Ex 202	70	78	101	95	95	97	96	92	82	105	109	
Atlas Copo ECM 660	67	84	102	98	104	105	105	104	101	112	115	
Volvo 6 Wheeled Water Cart	62	71	79	84	88	91	89	84	74	95	101	
Total Site Sound Power										120	121	

It is noted that the sound power level of the screen and crusher are above the EIS levels for each item of plant. Notwithstanding, the total emissions from all onsite plant are lower than the total logarithmic sum of the overall site criteria as shown in **Table 9**. Hence, the total target sound power levels are satisfied for site.

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5 Discussion

5.1 Discussion of Results – Reference Location (RL1)

Noise measurements conducted on Wednesday 31 March 2021 were conducted when Wallerawang Quarry was operating at normal production levels, which included use of crusher train, mobile screen, excavator, road trucks and water cart.

The noise contribution from the quarry at the reference location was 62dB LAeq(15min) for both measurements. The noise environment at the reference location was primarily dominated by a nearby generator, water pump and onsite traffic.

To verify the offsite noise levels, calculations were undertaken to estimate the attenuation from the site to each monitoring location. The attenuation calculations incorporated loss due to distance, and conservative topography (ie barrier attenuation) and air absorption losses. The results of the attenuation calculations identified received noise level and the results of the attended surveys are discussed for each monitoring location in **Section 5.2** to **Section 5.4**.

5.2 Discussion of Results – Location N1

Measurements conducted on Wednesday 31 March 2021 identified that Wallerawang Quarry noise was inaudible during both measurements conducted, and therefore satisfied the relevant noise limits of 43dB LAeq(15min). Extraneous non-quarry related sources included highway traffic, birds, and aircraft, that were significant contributors to the ambient noise environment.

The calculated attenuation between the quarry site and N1, considering distance loss, the surrounding topography and air absorption, was 76dB. Based on the site Lw established from the near field measurements, the resulting received quarry contribution at N1 is <43dBA. This level is significantly lower than the ambient dominant sources which generally masks site noise and confirms the quarry was audible as a background noise source at this location for both measurements conducted.

5.3 Discussion of Results – Location N2

Measurement results for N2 were dominated by onsite crushing and screen that were continually audible during both measurements conducted on Wednesday 31 March 2021. Quarry emissions were above the applicable noise criteria for privately owned residences during both measurements conducted at this location. Notwithstanding, it is noted that in accordance with Condition 3B of Schedule 3 of the site's development consent (reproduced in Section 2.2 of this report), monitoring location N2 has entered into a private agreement with the quarry and accordingly noise criteria are not applicable at this location. It is recommended that in accordance with Section 6.1.2 of the Noise Management Plan and as a best practice measure, a highwall is maintained on the northern boundary of site and that stockpiles and equipment is to be optimised so that there is no clear line of site between the screening/crushing plant and location N2.

The attenuation between the quarry site and N2 taking into account distance between the locations, the loss due to surrounding topography (ie ground attenuation) and air absorption is 66dB. Based on the current site sound power level established from the near field measurements of the screening/crushing plant, the resulting received quarry contribution at N2 is 53dBA. This estimated noise level is generally consistent with the measured noise contribution from the attended monitoring.

5.4 Discussion of Results – Location N3

Measurements conducted on Wednesday 31 March 2021 for N3 were dominated by local and highway traffic which masked quarry noise. Quarry operations were inaudible during all measurements at this location, notwithstanding quarry contributions remained below the relevant criteria of 43dB LAeq(15min) for both measurements conducted at the location.

The total attenuation due to distance, air absorption and surrounding topography for N3 was estimated to be 73dB. This resulted in an estimated site noise contribution of <25dBA which is consistent with the measured noise contribution from the attended monitoring.

5.5 Discussion of Results – Sound Power Audit

The results of the sound power audit demonstrate that current plant used onsite comply with the relevant mobile and static sound power criteria as outlined in the NVIA, with the exception of the screening plant and the crusher train. This is as the screening plant and the crusher train consists of five items of plant with the criteria outlined in the NVIA for a single item of plant. Notwithstanding, the overall emissions from combined plant on site remain below the combined site sound power criteria.

6 Conclusion

Muller Acoustic Consulting Pty Ltd (MAC) has completed a Noise Monitoring Assessment on behalf of Walker Quarries Pty Ltd. The assessment was completed to assess Wallerawang Quarry noise emissions against relevant criteria presented in EPL 13172 and DA 344-11-2001.

Attended measurements conducted on Wednesday 31 March 2021 identified that noise emissions generated by Wallerawang Quarry were above the applicable noise criteria for privately owned residences at location N2. However, this location has entered into a private agreement with the quarry and accordingly noise criteria are not applicable at this location. Recommendations to reduce the noise at N2 in accordance with the sites NMP are outlined in **Section 5.3** of this report.

Quarry noise remained inaudible at both locations N1 and N3 for attended measurements conducted on Wednesday 31 March 2021, which satisfies the specified noise limits in the Noise Management Plan and Environmental Protection Licence. These monitoring locations were dominated by extraneous sources that predominantly masked quarry operations.

The results of the sound power audit demonstrate that current plant used onsite comply with the relevant mobile and static sound power criteria as outlined in the NVIA, with the exception of the screen plant and the crusher train. Notwithstanding, the overall emissions from combined plant on site remain below the combined site sound power criteria.

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Appendix A – Glossary of Terms

Several technical terms have been used in this report and are explained in **Table A1**.

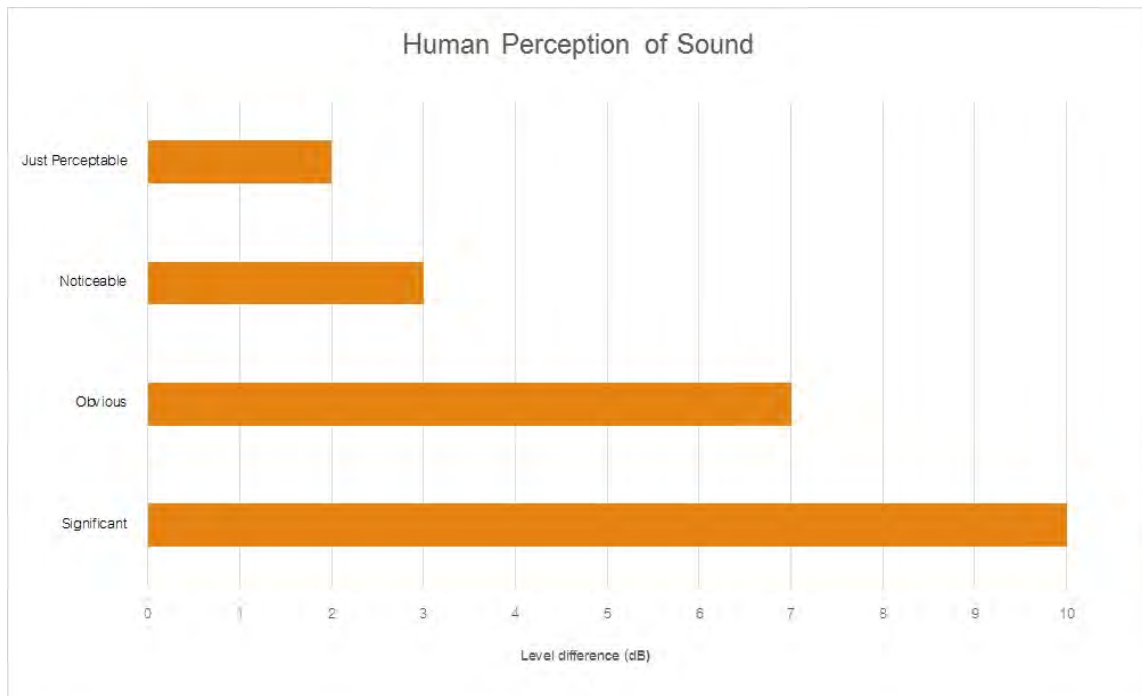
Table A1 Glossary of Terms	
Term	Description
1/3 Octave	Single octave bands divided into three parts
Octave	A division of the frequency range into bands, the upper frequency limit of each band being twice the lower frequency limit.
ABL	Assessment Background Level (ABL) is defined in the NPI as a single figure background level for each assessment period (day, evening and night). It is the tenth percentile of the measured L90 statistical noise levels.
Ambient Noise	The noise associated with a given environment. Typically, a composite of sounds from many sources located both near and far where no particular sound is dominant.
A Weighting	A standard weighting of the audible frequencies designed to reflect the response of the human ear to noise.
dBA	Noise is measured in units called decibels (dB). There are several scales for describing noise, the most common being the 'A-weighted' scale. This attempts to closely approximate the frequency response of the human ear.
dB(Z)	Decibels Linear or decibels Z-weighted.
Hertz (Hz)	The measure of frequency of sound wave oscillations per second - 1 oscillation per second equals 1 hertz.
LA10	A noise level which is exceeded 10 % of the time. It is approximately equivalent to the average of maximum noise levels.
LA90	Commonly referred to as the background noise, this is the level exceeded 90 % of the time.
LAeq	The summation of noise over a selected period of time. It is the energy average noise from a source, and is the equivalent continuous sound pressure level over a given period.
LAmx	The maximum root mean squared (rms) sound pressure level received at the microphone during a measuring interval.
RBL	The Rating Background Level (RBL) is an overall single figure background level representing each assessment period over the whole monitoring period. The RBL is used to determine the intrusiveness criteria for noise assessment purposes and is the median of the ABL's.
Sound power level (SWL)	<p>This is a measure of the total power radiated by a source. The sound power of a source is a fundamental location of the source and is independent of the surrounding environment. Or a measure of the energy emitted from a source as sound and is given by :</p> $= 10 \cdot \log_{10} (W/W_0)$ <p>Where : W is the sound power in watts and W₀ is the sound reference power at 10-12 watts.</p>

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

Table A2 Common Noise Sources and Their Typical Sound Pressure Levels (SPL), dBA

Source	Typical Sound Level
Threshold of pain	140
Jet engine	130
Hydraulic hammer	120
Chainsaw	110
Industrial workshop	100
Lawn-mower (operator position)	90
Heavy traffic (footpath)	80
Elevated speech	70
Typical conversation	60
Ambient suburban environment	40
Ambient rural environment	30
Bedroom (night with windows closed)	20
Threshold of hearing	0

Figure A1 – Human Perception of Sound



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Appendix B – Correspondence Register

Table B1 Correspondence Register

Date	Contact Between	Phone/Email	Comment
Monday 29 March 2021	J Van Der Merwe, R Heaton, A Irwin & N Shipman	Email	Initial contact to schedule environmental compliance survey and sound power audit in March 2021.
Monday 29 March 2021	J Van Der Merwe, R Heaton, A Irwin & N Shipman	Email	Email to confirm go ahead for survey.
Tuesday 30 March 2021	J Van Der Merwe and R Heaton	Call	Call to schedule survey on Wednesday 31 March 2021.
Wednesday 31 March 2021	Nicholas Shipman	Onsite meeting	Meeting prior to survey to confirm operations for the day, survey completed.

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Noise Monitoring Assessment

Wallerawang Quarry
September 2020

Prepared for: Walker Quarries Pty Ltd
September 2020
MAC160392RP8



Document Information

Noise Monitoring Assessment

Wallerawang Quarry, September 2020

Prepared for: Walker Quarries Pty Ltd



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MAC160392RP8	Final	17 September 2020	Robin Heaton		Oliver Muller	

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6 CONCLUSION 15

APPENDIX A – GLOSSARY OF TERMS

APPENDIX B – CORRESPONDENCE REGISTER

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1 Introduction

Muller Acoustic Consulting Pty Ltd (MAC) has been commissioned by Walker Quarries Pty Ltd to complete a bi-annual Noise Monitoring Assessment (NMA) for Wallerawang Quarry ('the quarry').

The NMA involved quantifying the noise contribution of the quarry by direct attended measurements to compare quarry emissions against relevant criteria. Monitoring has been conducted at three representative receiver locations in accordance with the Walker Quarry Noise Management Plan (NMP) and the quarry's Environmental Protection License (ref: 13172). An additional measurement at a nearfield reference location was also conducted to verify the operation of quarry plant and to quantify the noise contribution from site.

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

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- Environment Protection Licence EPL 13172 (EPL);
- Development Consent 344-1-2001 (Mod 3), February 2020;
- Australian Standard AS 1055:2018 - Acoustics - Description and measurement of environmental noise - General Procedures;
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2 Noise Criteria

2.1 Environmental Protection License Noise Limits

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Table 1 EPL Noise Limits, dBA			
Location	Day	Evening	Night
	LAeq(15min)	LAeq(15min)	LAeq(15min)
All privately owned residences	43	43	39

Note: Day Period is 7am to 6pm, Evening Period is 6pm to 10pm, Night Period is 10pm to 7am.

It is noted that Condition L4.3 of EPL 13172 identifies conditions under which the noise criteria do not apply and include:

- a) Wind speeds greater than 3m/s at 10m above ground level;
- b) Temperature inversion conditions greater than 3 degrees Celsius / 100m; or
- c) Under “non-significant weather conditions”.

2.2 Development Consent Noise Limits

Schedule 3 of the site’s Development Consent (DA344-11-2001) outlines applicable noise criteria for the operation of the quarry. **Table 2** reproduces the criteria as outlined in the development consent.

Table 2 Development Consent Noise Limits, dBA			
Location	Day	Evening	Night
	LAeq(15min)	LAeq(15min)	LAeq(15min)
All privately owned residences	43	43	35

2.3 Variance in Noise Limits

It is noted that the night-time criteria presented in the Development Consent differs from that outlined in the EPL. This is due to the consent being updated to reflect the recent modification for site. Hence, the more conservative criteria outlined in the consent have been adopted for this assessment.

Notwithstanding, as the quarry is not operational during the night period, the variance between the EPL criteria and Development Consent criteria is inconsequential.

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3 Methodology

3.1 Locality

Wallerawang is located approximately 10km to the north west of Lithgow, NSW. Receivers in the locality surrounding the quarry are primarily rural/residential and for consistency the naming conventions for each receiver has been retained from the NMP. The monitoring locations with respect to the quarry are presented in **Table 3** and graphically in the locality plan shown in **Figure 1**.

Table 3 Receiver Locations

ID	Address	Distance to Quarry Boundary
RL1	Reference Location (adjacent to site office)	N/A
N1	139 Gemalong, Marrangaroo, NSW	1000m
N2	987 Great Western Highway, Marrangaroo, NSW	160m
N3	2 Cypress Close, Wallerawang, NSW	480m

3.2 Environmental Noise Assessment Methodology

The attended noise surveys were conducted in general accordance with the procedures described in Australian Standard AS 1055:2018, "Acoustics - Description and Measurement of Environmental Noise", the EPL and NMP. The measurements were carried out using a Svantek Type 1, 971 noise analyser on Tuesday 1 September 2020. The acoustic instrumentation used carries current NATA calibration and complies with AS IEC 61672-2019-Electroacoustics - Sound level meters - Specifications. Calibration of all instrumentation was checked prior to and following measurements. Drift in calibration did not exceed $\pm 0.5\text{dBA}$.

Two daytime measurements of 15-minutes in duration were completed at each monitoring location during standard onsite operations. Where possible, throughout each survey the operator quantified the contribution of each significant noise source. Extraneous noise sources were excluded from the analysis to calculate the $L_{Aeq}(15\text{min})$ quarry noise contribution for comparison against the relevant EPL limits.






FIGURE 1

LOCALITY PLAN

REF: MAC160392



KEY	
	RECEIVER / MONITORING LOCATION
	REFERENCE LOCATION
	PROJECT SITE



4 Results

The monitoring and assessment results are presented in individual tables for each assessment location.

4.1 Assessment Results – Reference Location (RL1)

Operational attended noise monitoring was completed at RL1 on Tuesday 1 September 2020. **Table 4** presents the monitored noise level contributions and meteorological conditions for each measurement.

Table 4 Operator-Attended Noise Survey Results – Reference Location 1 (RL1)

Date	Time (hrs)	Descriptor (dBA re 20 µPa)			EPL Limit ¹	Meteorology	Comments
		L _{Amax}	L _{Aeq}	L _{A90}			
01/09/2020	10:30	74	58	55	N/A	WS: 1.6m/s	Site Vehicles 50-74
						WD: E	Generator and Sand Plant 56-60
						Rain: Nil	Reverse Alarm 54-57
Quarry Site L _{Aeq} (15min) Contribution							58
01/09/2020	13:02	79	62	60	N/A	WS: 1.2m/s	Generator and Sand Plant 59-61
						WD: E	Site Vehicles 55-60
						Rain: Nil	
Quarry Site L _{Aeq} (15min) Contribution							62

Note 1: EPL not applicable for this onsite reference location.

4.2 Assessment Results – Location N1

Operational attended noise monitoring was completed at N1 on Tuesday 1 September 2020. **Table 5** presents the monitored noise level contributions and meteorological conditions for each measurement.

Table 5 Operator-Attended Noise Survey Results – Location N1

Date	Time (hrs)	Descriptor (dBA re 20 µPa)			EPL Limit	Meteorology	Comments
		L _{Amax}	L _{Aeq}	L _{A90}			
01/09/2020	11:24	63	48	39	43	WS: 1.4m/s	Traffic 39-59
						WD: E	Farm Machinery 36-49
						Rain: Nil	Wind 32-36
Quarry Site L _{Aeq} (15min) Contribution							<30
01/09/2020	12:36	62	50	42	43	WS: 1m/s	Traffic 36-60
						WD: E	Birds 36-44
						Rain: Nil	Dogs 49-62
Quarry Site L _{Aeq} (15min) Contribution							<32
Quarry Site L _{Aeq} (15min) Contribution							<32

Note 1: Quarry Site L_{Aeq}(15min) calculated based on nearfield measurements.

4.3 Assessment Results – Location N2

Operational attended noise monitoring was completed at N2 on Tuesday 1 September 2020. **Table 6** presents the monitored noise level contributions and meteorological conditions for each measurement.

Table 6 Operator-Attended Noise Survey Results – Location N2

Date	Time (hrs)	Descriptor (dBA re 20 µPa)			EPL Limit	Meteorology	Comments
		L _{Amax}	L _{Aeq}	L _{A90}			
01/09/2020	10:08	57	45	40	43	WS: 0.1m/s WD: E Rain: Nil	Birds 38-51 Traffic 36-57 Aircraft 40-44 Quarry Inaudible
		Quarry Site L _{Aeq} (15min) Contribution					<30
01/09/2020	11:55	65	46	39	43	WS: 1.0m/s WD: E Rain: Nil	Traffic 37-53 Operator Noise Birds 36-42 Quarry Inaudible
		Quarry Site L _{Aeq} (15min) Contribution					<30

Note 1: Quarry Site L_{Aeq}(15min) calculated based on nearfield measurements.

4.4 Assessment Results – Location N3

Operational attended noise monitoring was completed at N3 on Tuesday 1 September 2020. **Table 7** presents the monitored noise level contributions and meteorological conditions for each measurement.

Table 7 Operator-Attended Noise Survey Results – Location N3

Date	Time (hrs)	Descriptor (dBA re 20 µPa)			EPL Limit	Meteorology	Comments
		L _{Amax}	L _{Aeq}	L _{A90}			
01/09/2020	10:49	65	48	36	43	WS: 0.5m/s WD: E Rain: Nil	Birds 36-41 Traffic 35-61 Quarry Inaudible
		Quarry Site L _{Aeq} (15min) Contribution					<30
01/09/2020	12:16	61	45	35	43	WS: 1m/s WD: E Rain: Nil	Traffic 33-61 Operator Noise Residential Noise 34-38 Dogs 33-36 Quarry Inaudible
		Quarry Site L _{Aeq} (15min) Contribution					<30

Note 1: Quarry Site L_{Aeq}(15min) calculated based on nearfield measurements.

5 Discussion

5.1 Discussion of Results – Reference Location (RL1)

Noise measurements conducted on Tuesday 1 September 2020 were conducted when Wallerawang Quarry was operating at normal production levels, which included use of crusher train, several mobile screens, excavator, road trucks, water cart, and mobile sand plant.

The noise contribution from the quarry at the reference location was 58dBA LAeq(15min) for the first round of monitoring and 62dBA LAeq(15min) for the second round of monitoring. This is 5dBA lower than the previous biannual survey conducted in March 2020. The reduction in noise emissions are primarily due to the crusher trains being located at a lower RL as the quarry pit progresses to a greater depth. The noise environment at the reference location was primarily dominated by the nearby sand plant and export road trucks using the weighbridge.

At the attended reference location, the sound power (Lw) for the acoustically significant items of plant was calculated to be 104dB LAeq(15min).

To verify the offsite noise levels, calculations were undertaken to estimate the attenuation from the site to each monitoring location. The attenuation calculations incorporated loss due to distance, and conservative topography (ie barrier attenuation) and air absorption losses. The results of the attenuation calculations identified received noise level and the results of the attended surveys are discussed for each monitoring location in **Section 5.2** to **Section 5.4**.

5.2 Discussion of Results – Location N1

Measurements conducted on Tuesday 1 September 2020, identified that Wallerawang Quarry noise were inaudible during both measurements, satisfying the relevant noise limits of 43dB LAeq(15min). Extraneous non-quarry related sources included highway traffic, birds and farm noise were significant contributors to the ambient noise environment.

The calculated attenuation between the quarry site and N1, taking into account distance loss, the surrounding topography and air absorption, was 75dB. Based on the site Lw established from the near field measurements, the resulting received quarry contribution at N1 is <30dBA. This level is significantly lower than the ambient dominant sources which generally masks site noise and confirms the quarry was audible as a background noise source at this location for both measurements conducted.

5.3 Discussion of Results – Location N2

Measurement results for N2 were dominated by highway traffic and bird noise for measurements on Tuesday 1 September 2020. Quarry emissions were inaudible during both measurements conducted at this location satisfying the relevant noise limit of 43dB LAeq(15min) on both occasions.

The attenuation between the quarry site and N2 taking into account distance between the locations, the loss due to surrounding topography (ie ground attenuation) and air absorption is 72dB. Based on the current site Lw established from the near field measurements, the resulting received quarry contribution at N2 is <32dBA. This estimated noise level is generally consistent with the measured noise contribution from the attended monitoring.

5.4 Discussion of Results – Location N3

Measurements conducted on Tuesday 1 September 2020 for N3 were dominated by local and highway traffic with quarry operations inaudible during both noise measurements at this location. Accordingly, quarry contributions remained below the relevant criteria of 43dB LAeq(15min) for both measurements conducted at the location. The current operational position of the crusher is shielded by the quarry walls and mounds which mitigates the noise contribution at this location.

The total attenuation due to distance, air absorption and surrounding topography for N3 was estimated to be 76dB. This resulted in an estimated site noise contribution of <30dBA which is consistent with the measured noise contribution from the attended monitoring.

6 Conclusion

Muller Acoustic Consulting Pty Ltd (MAC) has completed a Noise Monitoring Assessment on behalf of Walker Quarries Pty Ltd. The assessment was completed to assess Wallerawang Quarry noise emissions against relevant criteria presented in EPL 13172 and DA 344-11-2001.

Attended measurements for Tuesday 1 September 2020 identified that noise emissions generated by Wallerawang Quarry satisfy relevant noise limits specified in the Noise Management Plan and Environmental Protection Licence at all assessed locations. In summary, quarry noise were inaudible during all offsite measurements, with monitoring locations dominated by extraneous sources that predominantly masked quarry operations.

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Appendix A – Glossary of Terms

Several technical terms have been used in this report and are explained in **Table A1**.

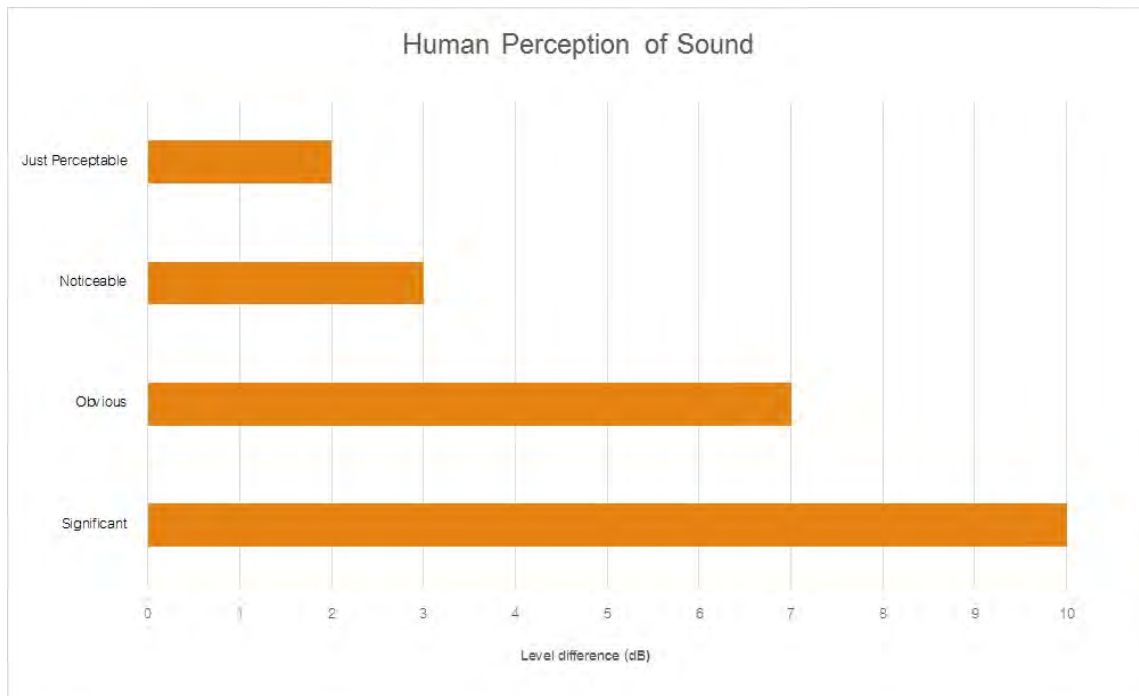
Table A1 Glossary of Terms	
Term	Description
1/3 Octave	Single octave bands divided into three parts
Octave	A division of the frequency range into bands, the upper frequency limit of each band being twice the lower frequency limit.
ABL	Assessment Background Level (ABL) is defined in the NPI as a single figure background level for each assessment period (day, evening and night). It is the tenth percentile of the measured L90 statistical noise levels.
Ambient Noise	The noise associated with a given environment. Typically, a composite of sounds from many sources located both near and far where no particular sound is dominant.
A Weighting	A standard weighting of the audible frequencies designed to reflect the response of the human ear to noise.
dBA	Noise is measured in units called decibels (dB). There are several scales for describing noise, the most common being the 'A-weighted' scale. This attempts to closely approximate the frequency response of the human ear.
dB(Z)	Decibels Linear or decibels Z-weighted.
Hertz (Hz)	The measure of frequency of sound wave oscillations per second - 1 oscillation per second equals 1 hertz.
LA10	A noise level which is exceeded 10 % of the time. It is approximately equivalent to the average of maximum noise levels.
LA90	Commonly referred to as the background noise, this is the level exceeded 90 % of the time.
LAeq	The summation of noise over a selected period of time. It is the energy average noise from a source, and is the equivalent continuous sound pressure level over a given period.
LAmx	The maximum root mean squared (rms) sound pressure level received at the microphone during a measuring interval.
RBL	The Rating Background Level (RBL) is an overall single figure background level representing each assessment period over the whole monitoring period. The RBL is used to determine the intrusiveness criteria for noise assessment purposes and is the median of the ABL's.
Sound power level (SWL)	This is a measure of the total power radiated by a source. The sound power of a source is a fundamental location of the source and is independent of the surrounding environment. Or a measure of the energy emitted from a source as sound and is given by : $= 10 \cdot \log_{10} (W/W_0)$ Where : W is the sound power in watts and W ₀ is the sound reference power at 10-12 watts.

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

Table A2 Common Noise Sources and Their Typical Sound Pressure Levels (SPL), dBA

Source	Typical Sound Level
Threshold of pain	140
Jet engine	130
Hydraulic hammer	120
Chainsaw	110
Industrial workshop	100
Lawn-mower (operator position)	90
Heavy traffic (footpath)	80
Elevated speech	70
Typical conversation	60
Ambient suburban environment	40
Ambient rural environment	30
Bedroom (night with windows closed)	20
Threshold of hearing	0

Figure A1 – Human Perception of Sound



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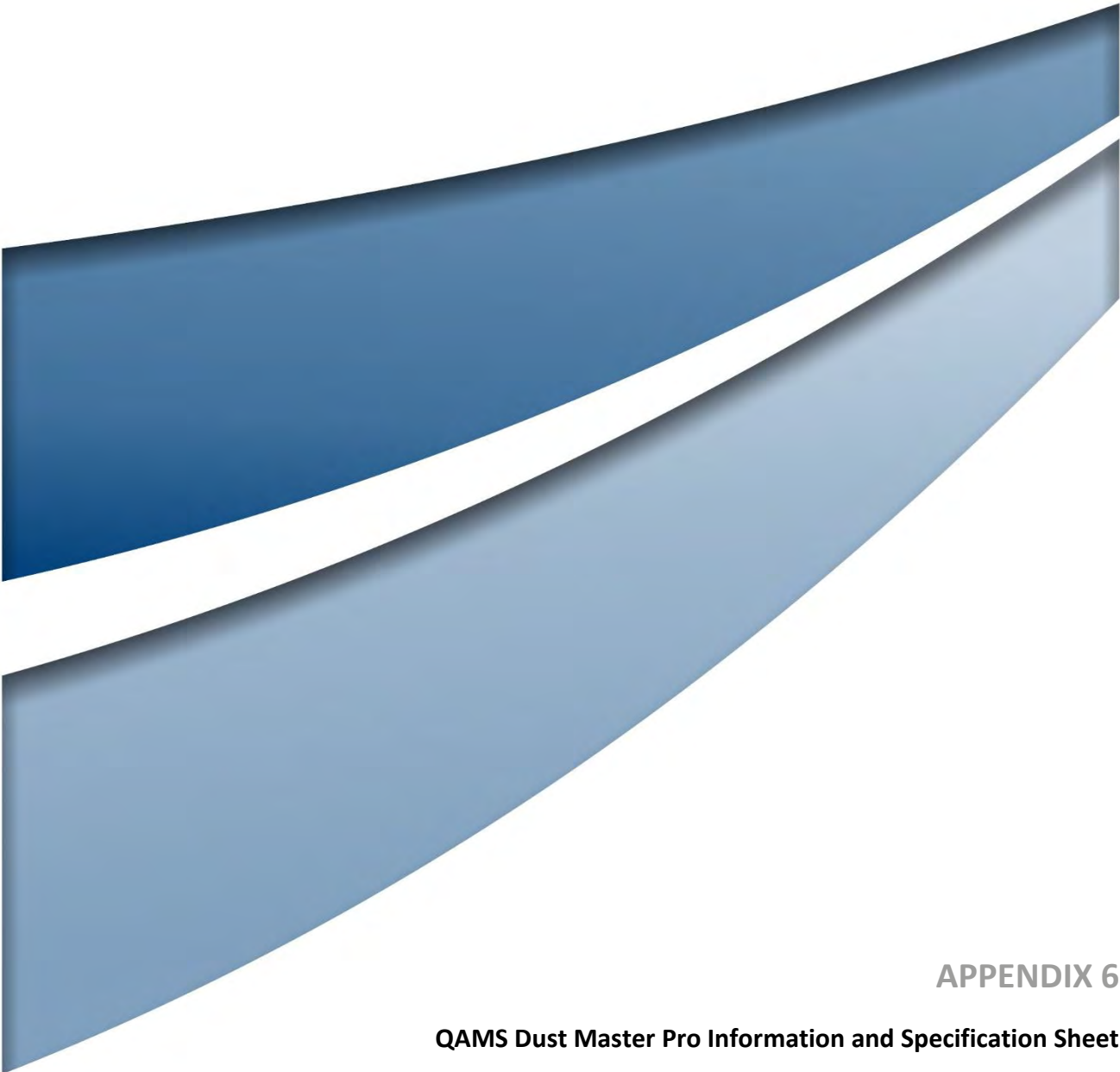
Appendix B – Correspondence Register

Table B1 Correspondence Register

Date	Contact Between	Phone/Email	Comment
Friday 14 August 2020	J Van Der Merwe, R Heaton & A Irwin	Phone Call	Initial contact to schedule environmental compliance survey in September 2020.
Monday 17 August 2020	J Van Der Merwe, R Heaton & A Irwin	Email	Email confirming week to undertake noise survey
Monday 31 August 2020	J Van Der Merwe, N Shipman & R Heaton	Call	Call to confirm survey would be undertake the following day and to confirm COVID safety protocols.
Tuesday 1 September 2020	N Shipman & J Van Der Merwe	Onsite meeting	Meeting prior to survey to confirm operations for the day, survey completed.
Friday 4 September 2020	R Heaton & A Irwin	Phone Call	Call to confirm the survey was successfully completed and no noise exceedances were measured.

Muller Acoustic Consulting Pty Ltd
PO Box 262, Newcastle NSW 2300
ABN: 36 602 225 132
P: +61 2 4920 1833
www.mulleracoustic.com





APPENDIX 6

QAMS Dust Master Pro Information and Specification Sheet

DUST MASTER PRO

REAL-TIME PARTICULATE MONITOR



- ▶ Made in Australia
- ▶ Near reference measurement
- ▶ PM10, PM2.5, PM Total and more
- ▶ Easy to use
- ▶ Remote connectivity & telemetry
- ▶ Local and genuine support



HOW IT WORKS

The QAMS Dust Master Pro particle counter uses laser technology for simultaneous real-time PM monitoring of up to 5 PM fractions: PM₁₀, PM₄, PM_{2.5}, PM₁ and Total PM.

The advanced pump system provides accurate data with quiet operation due to consistent 5LPM flow rate and pulsation dampening technology.

The quick deploy design, graphical display and dedicated keypad with intuitive menu simplifies on-site operation, while the new Visual Master Pro Software gives remote users unprecedented capabilities.

PERFECT FOR:

- ▶ Governments & Authorities
- ▶ Consultants & Engineering
- ▶ Civil & Construction
- ▶ Mining & Quarries
- ▶ Logistics, Ports & Terminals



Outstanding Solutions. Exceptional Service.

www.thomsongroup.com.au



KEY FEATURES AND HIGHLIGHTS:

- **Real-time** measurement of up to 5 PM fractions **simultaneously**
- Capable of measuring **PM10** and **PM2.5** (the most common fractions for measuring dust that is harmful to health) as well as **PM4, PM1** and **Total PM**
- **Manufactured in Australia** with premium quality and service you can trust
- Meets Australian Standard **3580.9.9 (2017)**
- Advanced pump system with high **5LPM** flow rate and quiet operation
- Easy field calibration available via **Automatic Field Calibration Mode**
- **RH controlled heated inlet** along with a unique in-line water trap **eliminates moisture interference**
- **K-factor** site correlation available
- Annual factory service recommended. **No other maintenance required**
- Mains, battery or solar power options
- **In-built** data logging capability
- **Remote data access** via 3G modem
- Easy to set alarm capabilities through 3G/4G SMS messaging to mobile phone, external siren or visual beacon



Weather & Meteorological Sensors

The Dust Master Pro has Plug n Play integration with up to 3 Lufti Meteorological Sensors, which means no additional costly data loggers for your weather monitoring requirements. The DMP has the capability to record up to 48 distinct parameters, including:

- Wind Speed and Direction
- Air Temperature
- Relative Humidity
- Barometric Pressure
- Precipitation Type, Intensity and Quantity
- Solar Radiation
- Lightning Strikes
- and more



Visual Master Pro Data Logging Software

VMP Software (valued at \$1,799) comes included with your Dust Master Pro purchase. The remote interface software requires no coding and makes it simple for both non-technical and expert users to access data and adjust instrument setting at an advanced level.

- Live data display allows you to access first-hand information
- Real-time data display, real-time decision making
- Remote access for data downloading and configuration
- Synchronised data set for ease of download
- Unique EPA mode allows user to simply set up the system to meet EPA requirements
- Operating on Windows 7 through to Windows 10
- Compatible with QAMS Dust Master Pro and Met Master Pro
- Format available in CSV, HTML and ASCII.

Outstanding Solutions. Exceptional Service.

www.thomsongroup.com.au



Proudly Manufactured in Australia by Thomson Environmental Systems

We developed the QAMS range specifically for outdoor monitoring in Australia's harsh conditions. We built QAMS for ease-of-use, robustness and suitability for a diverse number of applications.

Since the first QAMS monitor launched in 2008, we have continually strived to improve the product and make it the highest quality instrument on the market. With years of field operation and a strong positive response from our users, we are proud that the QAMS range has become a leader in monitoring, construction, mining and industrial monitoring applications.



DUST MASTER PRO DATASHEET

Particle Size Range	0.2um to 10um	Communications	1 x RS232 digital port Analogue Modbus TCP (optional)
Dust Measurement Range	0.001 to 10mg/m ³ (Internal dilution available)	Outputs	3 x Analogue Outputs (0 to 2.5 volt or 4-20mA [Jumper selectable]), 1 x RS232 or RS485 Output, Ethernet Module Optional, 3 x Solid State Relays for Audio and Visual Alarms
Simultaneous PM Fraction Measurements	Simultaneously measures all 3 popular PM fractions; PM2.5, PM10 and Total PM with option to add PM ₁ and PM ₁ . Other PM fractions available upon request.	Enclosure Type	NEMA4 / IP66 rated, excluding heated inlet and exhaust Display Type 128 x 64 bit low energy graphical LCD display
Measurement Resolution	0.001mg/m ³ (1ug/m ³)	Keypad / User Interface	12 button function with keys
Flow Rate Flow Accuracy Single Pump System	5.0 litre per minute (default), user adjustable from 3 to 8 lpm Precision automatic flow control to within +/- 1% With internal solenoid valve to control internal purge cycle every 30 minutes as standard.	Tripod or Post Mounting	May be easily mounted on a 50mm diameter post or on a TES transportable heavy duty tripod
Barometric Pressure	Built in barometer for ambient static pressure measurements for precise flow control	Optional Inlet Jets	PM _{2.5} , PM ₁₀ , Total PM - supplied with unit PM ₁ , PM ₁ - available on request
Data Download	Data is polled or, upon special request, automatically and continually pushed to your server. Ability to fully synchronise data with the use of Visual Master Pro Software	Heated Inlet	Precision heated inlet controls inlet temperature to ensure sampling at 45% Relative Humidity max.
Quartz/Inert Filter Sampling	Integrated filter holder; 37mm filter cartridge	Calibration Method	Fully calibrated to ISO12103-1 international standards by TES
Data Logging Interval and Internal Memory	Fully user adjustable from 5 to 999s Ability to store over 2 years of time and date stamped 10 minute data captures from a single PM channel. Note, actual storage depends on the application as it will vary depending on additional parameters	Power Options	Main Power - Operates from 80 to 260VAC and is fully weatherproof. Battery Power - Standard or Portable. Includes rechargeable battery, regulator and battery box. 'Standard Battery System' provides approx 210 hours of operation with the inlet heater OFF or 70 hours with the inlet heater ON. Solar Power System provides continuous operation based on average of >4.5 hours of sunlight per day, and will continue for up to 3 days no sun. System includes Solar Panel & Stand, Battery & Battery box, Regulator
NIDSH 5040 Capable Sampling	Yes, using 37mm filter cassette	Weight	System 7kg Heated Inlet 15Kg
Web Based Data Collection	Optional	Dimensions - System	Width 300mm Depth 200mm Height 350mm
Meteorological Inputs	Up to 3 Lufft instruments can be integrated - each with multiple channels including wind speed, wind direction, humidity, temperature, precipitation, barometric pressure, solar radiation, evaporation, sigma theta, lightning & more.	Dimensions - Heated Inlet	Length 500mm Width 45mm
Digital Inputs/Outputs	3 optically isolated inputs, voltage free 1 x RS232 or RS485, 2 x Analogue Inputs (0 to 2.5 volt or 4-20mA [Jumper selectable]), 2 x Counter Channels, 2 x P110D & SHT75X inputs included.	Operating Conditions	-10 to 50°C temperature range 0 to 95% humidity range
Relay Contacts	3 relay contacts (NO/COM/NO), Alarm 1 set point, Alarm 2 set point, Instrument fault alert, Max. contact switching EA for Alarm Capabilities	Annual Calibration	TES's unique design gives you a low-cost for calibration. Instead of returning the entire monitor, you can choose to return only the optical engine for annual calibration. The calibrated optical engine will be returned to you with a new pump and a replacement internal filter. You can then perform temperature, pressure and flow calibrations to complete the process. Alternatively, TES can perform the entire calibration.
Alarm Capabilities	3G / 4G / NEXTO SMS messaging to mobile phone, external siren, visual strobe light and email alerts. Carrier charges may apply.		

SYDNEY | BRISBANE | PERTH | MELBOURNE | CANBERRA

Phone: +61 2 9526 8199

Email: tes@thomsongroup.com.au

www.thomsongroup.com.au



Visual Master Pro Software

Thomson Environmental Systems is pleased to introduce Visual Master Pro Software; a revolutionary remote interface for the QAMS Master Pro Series



- Live Data Display
- System Configuration
- Data Download
- Setting Adjustment

The new standard for industry interfaces...

Visual Master Pro Software

Peace of mind



Real-time data display, Real-time decision making



The QAMS All-in-one

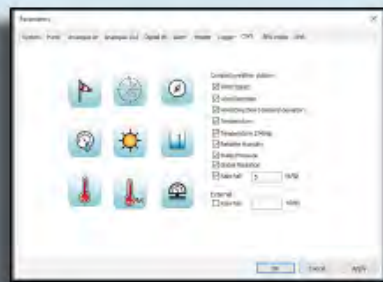
- QAMS Dust Master Pro Monitor
- Lufft All-in-one Weather Sensor



Visual Master Pro Software

Increase efficiency, save costs

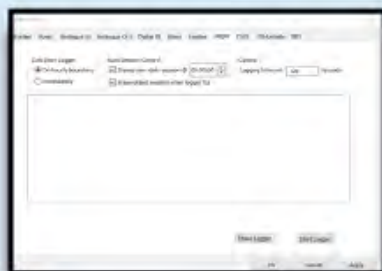
Remote System Set Up and Configuration



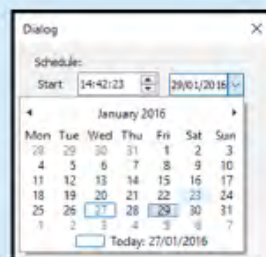
Configure Dust, Gas and
Weather Monitors



Configure Alarm Thresholds
and Times



Configure Logger Interval



Configure EPA Mode
(pre-program sample runs)



Watch TES's step by step instructional videos for set up and configuration

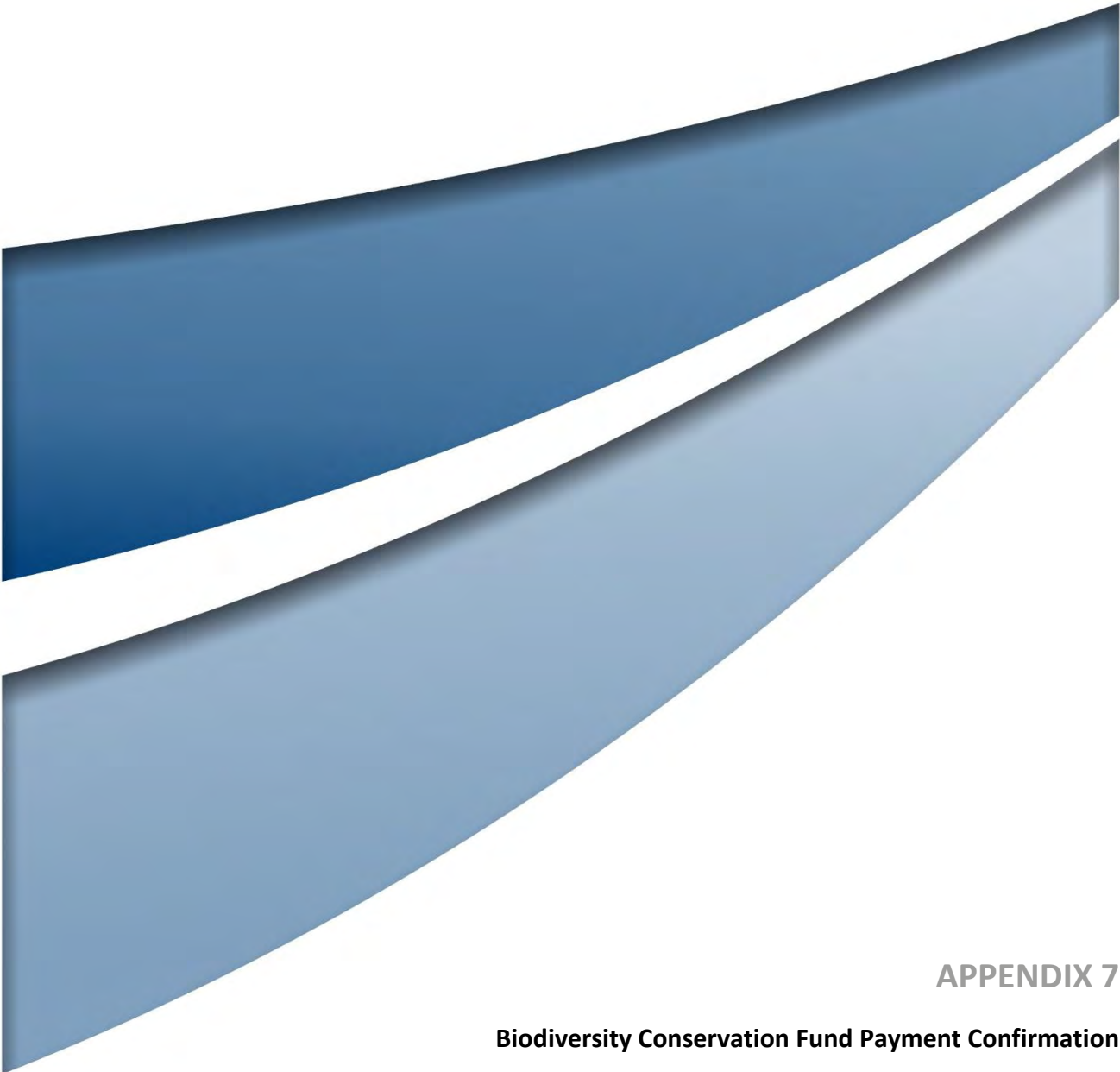


Visual Master Pro Software

Downloading Data



Visual Master Pro operates on Windows 7 through to Windows 10, and allows the user to view and download data from their Dust, Gas or Met Master Pro at the click of a button. Data can be downloaded in **CSV, HTML and ASCII formats**, ready for the user to manipulate as they wish and create customised reports.



APPENDIX 7

Biodiversity Conservation Fund Payment Confirmation

From: Jessica O'Donnell <Jessica.O'Donnell@environment.nsw.gov.au>
Sent on: Monday, May 18, 2020 9:44:02 PM
To: Alex Irwin <airwin@umwelt.com.au>
CC: Holly Park <Holly.Park@bct.nsw.gov.au>; Michelle Cox <michelle.cox@environment.nsw.gov.au>; davidm@walkerquarries.com.au
Subject: RE: Application for Payment into the Biodiversity Conservation Fund_Wallerawang Quarry_DA 344-11-2001-MOD3 I-0005160

Hi Alex,

Thanks for providing the variations report. I'll send through confirmation that your application has been approved now. Regards,

Jess

Jessica O'Donnell
Project Officer
NSW Biodiversity Conservation Trust
T 02 9995 6463 | W www.bct.nsw.gov.au | [Who is the BCT?](#)
4PSQ, Level 7, 12 Darcy Street, Parramatta NSW 2150
Please note I work across two teams: **Mon - Wed:** Agreements and Technical Services | **Wed - Fri:** Biodiversity Offsets Program



The NSW Biodiversity Conservation Trust acknowledges the Traditional Custodians of Country throughout NSW and recognises their ongoing connection to land, waters and culture. We pay our respects to their Elders past, present and emerging and seek to genuinely and collaboratively engage with Aboriginal people in the delivery of our private land conservation programs.

From: Alex Irwin <airwin@umwelt.com.au>
Sent: Tuesday, 19 May 2020 7:08 AM
To: Jessica O'Donnell <Jessica.O'Donnell@environment.nsw.gov.au>
Cc: Holly Park <Holly.Park@bct.nsw.gov.au>; Michelle Cox <michelle.cox@environment.nsw.gov.au>; 'davidm@walkerquarries.com.au' <davidm@walkerquarries.com.au>
Subject: RE: Application for Payment into the Biodiversity Conservation Fund_Wallerawang Quarry_DA 344-11-2001-MOD3 I-0005160

Jessica,

Having followed up with the accredited BAM assessor for this project, attached is the Credit report (Variations) from the Biodiversity Assessment Method (BAM credit calculator) requested by the BCT on 8/5/2020.

Regards,

Alex Irwin
Principal Environmental Consultant

Umwelt (Australia) Pty Limited
Office 1, 3 Hampden Avenue
Orange, NSW 2800

Phone: (02) 4950 5322
Mobile: 0436 606 529

www.umwelt.com.au

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Please consider the environment before printing this email

From: Jessica O'Donnell <Jessica.O'Donnell@environment.nsw.gov.au>
Sent: Monday, 11 May 2020 8:47 AM
To: Alex Irwin <airwin@umwelt.com.au>
Cc: Holly Park <Holly.Park@bct.nsw.gov.au>; Michelle Cox <michelle.cox@environment.nsw.gov.au>; 'davidm@walkerquarries.com.au' <davidm@walkerquarries.com.au>
Subject: FW: Application for Payment into the Biodiversity Conservation Fund_Wallerawang Quarry_DA 344-11-2001-MOD3 I-0005160

Hi Alex,

Thanks for clearing that up. I'll continue processing the application. Regards,

Jess.

From the BDAR:

TAX INVOICE



Biodiversity
Conservation
Trust

OEH Financial Services Delivery

PO BOX 1967 HURSTVILLE NSW 1481

Phone (02) 9585 6682 . Fax (02) 9585 6026 .

E-mail accounts.receivable@environment.nsw.gov.au

WALKER QUARRIES PTY LTD
P.O. Box 307
LITHGOW NSW 2790

Customer Number: 418460
Invoice Number: 1400000015
Invoice Date: 21.11.2018
Your reference: JOHN MCAULEY

Description	Net \$	GST \$	TOTAL \$
PAYMENT INTO THE BIOBANKING CONSERVATION FUND TO SATISFY AN OFFSET OBLIGATION	271,475.66	27,147.57	298,623.23
TOTAL AMOUNT PAYABLE			298,623.23

PAYMENT DUE WITHIN 7 DAYS OF INVOICE DATE

Please contact our Accounts staff if you have any payment enquiries. Please note: Failure to pay by the due date may incur penalty interest. Payments are to be made payable to Office of Environment and Heritage by cheque, EFT, money order or credit card authority. **Note:** Credit / debit card payments will incur a surcharge of 0.4% of the total amount of the invoice (including GST if applicable) to recover merchant interchange fees. **To enable correct identification of your payment, please return the Remittance Advice below, and ensure the Invoice no. is quoted.**

PAYMENT REMITTANCE ADVICE - METHOD OF PAYMENT

Tick if receipt is required

Customer Details: WALKER QUARRIES PTY LTD
P.O. Box 307
LITHGOW NSW 2790

Company Code: 0600
Customer Number: 418460
Invoice Number: 1400000015
Invoice Date: 21.11.2018
Invoice Total: \$298,623.23

Payment by EFT **Must Quote Invoice No. above.**

Westpac Banking Corp BSB: 032-001
BCT Operating A/C Account No: 181356

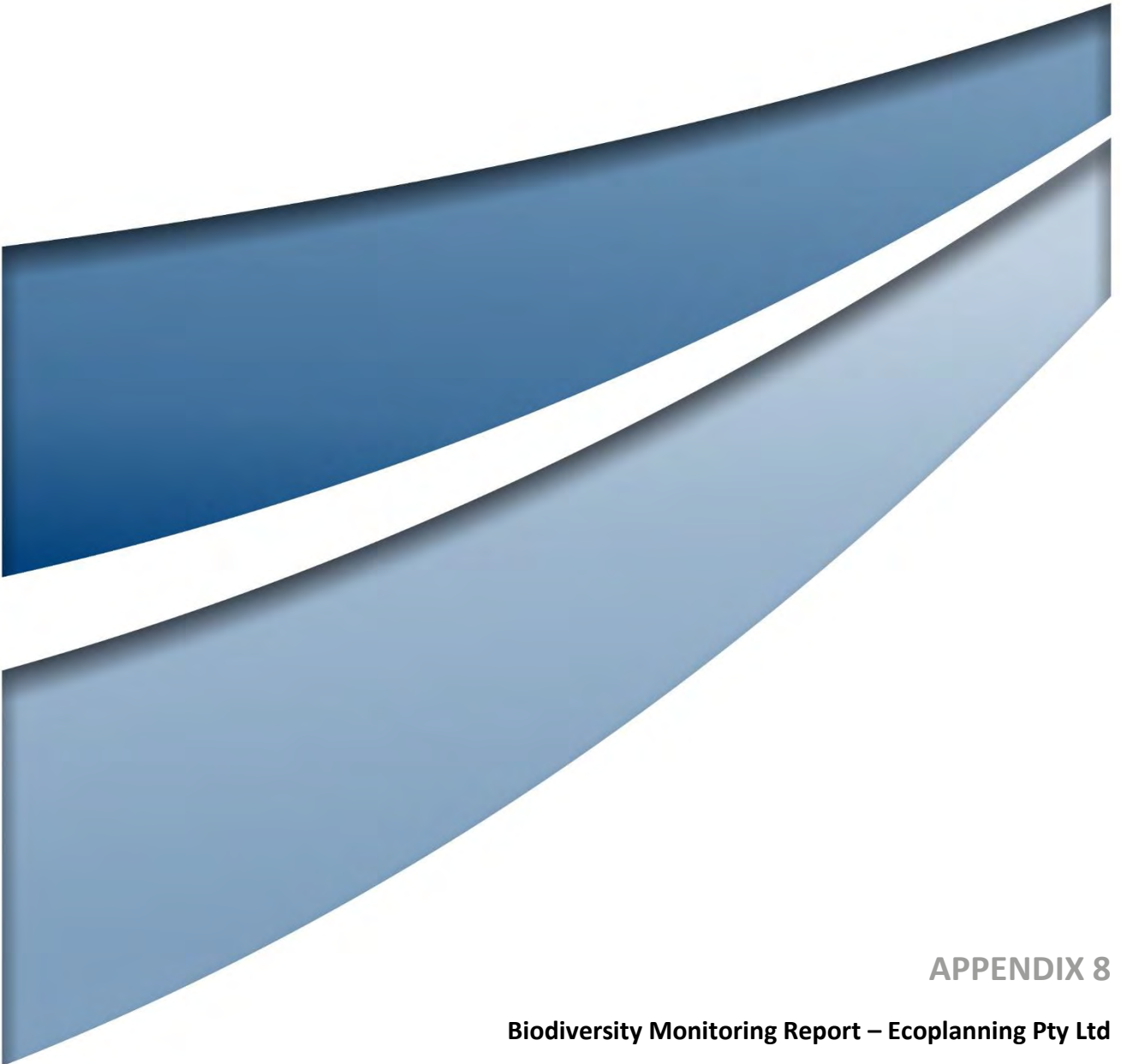
Payment by VISA/MASTERCARD credit card via the [Payment Portal](#)

Alternatively please go to: <http://www.environment.nsw.gov.au/Payments.html> using your internet browser.

I accept that payment by credit card, will incur an additional 0.4% surcharge, being \$1,194.49 (including GST of \$108.59).

Cheque enclosed, made payable to NSW Biodiversity Conservation Trust

Send Payment to: **OEH Financial Services Delivery, PO BOX 1967 HURSTVILLE NSW 1481**



APPENDIX 8

Biodiversity Monitoring Report – Ecoplanning Pty Ltd



ecoplanning
ecology | planning | offsets

Biodiversity Monitoring 2020



Wallerawang Quarry

Prepared for: Walker Quarries

18 February 2021 Version: 1.0

PROJECT NUMBER	2020-204			
PROJECT NAME	Biodiversity Monitoring 2020			
PROJECT ADDRESS	Wallerawang Quarry			
PREPARED FOR	Walker Quarries			
AUTHOR/S	John Gollan, Joel Nicholson			
REVIEW	Technical	QA	Version	Date to client
	Brian Towle		1.0	18 February 2021
LICENCES	Scientific Licence		SL101557	
	Bionet Sensitive Species Data Licence		1115	
	Animal Research Authority Ethics Licence		Fauna Surveys and Monitoring (16/346)	
	Scientific Collection - Aquatic		P19/0009-1.0 & OUT19/2602	

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ECOPLANNING PTY LTD | 74 HUTTON AVENUE BULLI NSW 2516 | P: (02) 4244 2736



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Glossary and abbreviations

Acronym	Description
ASL	above sea level
BAM	Biodiversity Assessment Method
BMP	Biodiversity Management Plan
DPIE	Department of Planning, Industry and Environment
FPC	Foliage Projected Cover
NPWS	National Parks & Wildlife Services
PCB	Purple Copper Butterfly
PCT	Plant Community Type
TSR	Travelling Stock Route
VIS	Vegetation Integrity Score



1 Introduction

Walker Quarries Pty Ltd (Walker Quarries) currently operates Wallerawang Quarry ('the Quarry'), located on land adjoining the Great Western Highway to the south of Wallerawang, approximately 8 km northwest of Lithgow (**Figure 1.1**). A Biodiversity Management Plan (BMP; Umwelt 2020) has been prepared to guide the management of biodiversity values on the Quarry and in accordance DA 344-11-2001 (Condition 3(26)).

Section 6 of the BMP for the Quarry (Umwelt 2020) outlines the ecological monitoring program for the Quarry. The monitoring is designed to assess the adequacy of the ecological management strategies to be undertaken as part of the BMP.

The specific objectives of the monitoring program are to:

- evaluate the success of flora and fauna management strategies;
- facilitate continuous improvement in rehabilitation and revegetation practices;
- record and document changes in retained vegetation within the Quarry, and allow for comparison with previous records;
- record and document fauna population changes and identify any breeding and critical habitat; and
- ensure the ecological significance of the remnant vegetation or rehabilitated areas are maintained or improved as a result of ongoing management practices.

The BMP includes specific monitoring procedures in relation to the Purple Copper Butterfly (*Paralucia spinifera*; PCB) and local flora and fauna. This report presents the method and results of monitoring for the PCB and local flora and fauna undertaken in spring 2020 and in accordance with the BMP.

Additionally, in response to comments on the draft BMP from the Biodiversity and Conservation Division of the NSW Department of Planning Industry and Environment (DPIE), this report considers opportunities and locations in which planting of *Bursaria spinosa* subsp. *lasiophylla* may create additional habitat for PCBs.



Figure 1.1: Site location

2 Methods

2.1 Local flora and fauna

Monitoring surveys for local fauna were undertaken by John Gollan (Senior Ecologist, Ecoplanning) and Joel Nicholson (Ecologist, Ecoplanning) on 29 and 30 October 2020. Flora data from fixed quadrats were collected by Brian Towle (Senior Ecologist, Ecoplanning) and Ben Brown (Ecologist, Ecoplanning) on 16 November 2020.

In accordance with the requirements of the BMP, previous monitoring of local flora involved annual monitoring of vegetation within six monitoring plots (10 m × 10 m). However, in 2020 and for the first time since monitoring began at the Quarry, the flora data at each of the six plots were collected in-line with the Biodiversity Assessment Method (BAM 2020). In brief, BAM involves collecting floristic data within a 20 m × 20 m plot as well as a number of vegetation metrics (e.g. litter cover) along a 50 m transect. These data are entered into the BAM calculator (BAM-C) to derive a Vegetation Integrity Score (VIS) that reflects a site's vegetation condition relative to a benchmark condition for the same vegetation type in the contemporary landscape.

The new floristic monitoring plot-transects were positioned so they overlapped the six previous monitoring locations (10 m × 10 m) and are shown in **Figure 2.1**. Location details for the new monitoring locations are shown in **Table 2.1**. The numbers used for site labels corresponds with previous years i.e. WALLQ1 = BAM01, WALLQ2 = BAM02 etc. So that the plot-transects could be located for monitoring in future years, a star picket was positioned at the start and end of the 50 m transect.

Observations of local fauna, including species identified from call recognition, indirect observations (including scats, tracks, chewed cones etc.) or observed visually were recorded concurrently with surveys for the PCB. These fauna observations were not confined to any specific plot and included areas of retained bushland within the Quarry which were traversed to access monitoring plots.

Table 2.1: Floristic monitoring plot locations

Monitoring plot	Coordinates (GDA94 z56)		Orientation (°)	Plant Community Type
	Easting	Northing		
BAM01	227963	6296432	95	732 – Broad-leaved Peppermint - Ribbon Gum grassy open forest in the north east of the South Eastern Highlands Bioregion
BAM02	227842	6296341	250	
BAM03	228015	6296433	130	
BAM04	228196	6296437	190	1093 – Red Stringybark - Brittle Gum - Inland Scribbly Gum dry open forest of the tablelands, South Eastern Highlands Bioregion
BAM05	228130	6296822	130	
BAM06	228290	6296629	55	



Figure 2.1: Plot locations

2.2 Purple Copper Butterfly

Monitoring surveys for the PCB at the Quarry and control site were undertaken on the 29 and 30 October 2020 by John Gollan and Joel Nicholson. In accordance with the BMP, five patches of *Bursaria spinosa* subsp. *lasiophylla* (Blackthorn) within the Quarry were monitored. The locations of the five monitoring sites are shown in **Figure 2.2** and summarised in **Table 2.2**. At each of the monitoring sites the following methods were employed:

- Surveyor positioned themselves to survey the site and conduct visual inspections to observe any butterfly activity for at least 10 minutes per site.
- Random plants were searched for PCB caterpillars.
- Random plants were selected and searched for the ant species *Anonychomyrma itinerans*, as this ant has a mutualistic relationship with PCB.
- Selected *Bursaria spinosa* subsp. *lasiophylla* plants were gently shaken to trigger a flight response from any butterflies present.
- Any butterflies observed were captured using a butterfly net and identified using Braby (2016). All animals captured were released at their point of capture.
- The age of plants (large plants and seedlings present), health (any new shoots present) and evidence of grazing (chewed leaves) were recorded.

The BMP identifies that this survey methodology is also to be undertaken at two control sites, with control sites located at Cox's Creek, Wallerawang, and Eusdale Road, Yetholme surveyed in previous seasons (2016 and 2017). Consultation with the NSW Department of Planning, Industry and Environment prior to the 2018 surveys identified an alternative control site at the Cheetham Flats TSR (Hampton Road, Rydal) located approximately 13 km south-west of the Quarry. As in 2018 and 2019, the 2020 surveys for PCB at control sites were limited to the single site at Cheetham Flat TSR.

Weather conditions during the survey period (29 and 30 October 2020), as recorded onsite, were warm with maximum temperatures between 21-28°C and with some cloud cover. Winds were generally light. Weather conditions as recorded at the nearest meteorological station at Marrangaroo (station 063308), located approximately 5 km east of the Quarry, are presented in **Table 2.3**. Monthly rainfall totals for 2016 to 2020, as recorded at the Lidsdale (Maddox Lane) Meteorological Station, is presented in **Table 2.4**.

Survey timing was identified as being towards the very end of the active period for PCB in 2020. In 2020 PCB were identified as being active in early September which was earlier than in previous seasons (J. Petrie, DPIE Threatened Species Officer pers. comm. 2020). The combination of an early active period for the species and prolonged wet, cloudy and cool conditions in early October restricted opportunities to undertake the PCB surveys.



Figure 2.2: Purple Copper Butterfly monitoring locations

Table 2.2: Purple Copper Butterfly site details

Monitoring plot	Coordinates (GDA94)		Elevation (m ASL), aspect & slope (°)	Approx. stand size
	Easting	Northing		
17	227716	6295941	~922 m ASL. North facing slope, ~10°	100 × 30 m
18	227887	6295945	~917 m ASL. North facing slope, ~5°	20 × 20 m
19	227948	6296046	~915 m ASL. East facing slope, ~30°	20 × 20 m
20/21	228005	6296045	~910 m ASL. South facing slope, ~30°	30 × 20 m
24	228244	6295945	~955 m ASL. North-east facing slope, ~20°	20 × 20 m

ASL – Above Sea Level

Table 2.3: Weather conditions during Purple Copper Butterfly surveys, as recorded at Marrangaroo meteorological station (#063308)

Date	Temperature (°C)		Rainfall (mm)	Wind - 9 am		Wind – 3 pm	
	Min	Max		Direction	Speed (km/hr)	Direction	Speed (km/hr)
29/10/2020	8.5	18.3	0.8	E	24	Calm	14.5
30/10/2020	3.8	19.1	3.0	E	35	ENE	4

Table 2.4: Total monthly rainfall (mm) from 2016 to 2020, as recorded at the Lidsdale (Maddox Lane) Meteorological Station

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	142	28.8	69.6	6.2	26	173.4	91.4	52.2	118.6	71.4	58.4	86.4
2017	37.2	12.2	141.4	21.2	32.6	19.6	6.6	41.8	4.2	106	28.8	75.2
2018	49	65.2	56.6	13.6	12.6	34.6	5.4	38	67.6	79.8	124.6	80.6
2019	154.6	21.4	84.2	1	37.2	16.2	10.8	18	52	9.4	35.8	2.8
2020	46.8	131.6	115.0	93.6	47.8	39.0	77.8	103.8	57.0	68.6	Not available	
Mean	85.9	51.8	93.3	27.1	31.2	56.5	38.4	50.7	59.8	67.0	71.8	72.8

3 Results and Discussion

3.1 Local flora and fauna

The photos and floristic data recorded within each of the six monitoring plots are presented in **Appendix A**.

3.1.1 Photo-point monitoring

No disturbance to vegetation or soils including vegetation clearing, widespread dieback, erosion or excavations associated with the Quarry operations were recorded within monitoring plots as shown in site photographs (**Appendix A**).

3.1.2 Floristic monitoring

Vegetation integrity scores (VIS) were calculated for each monitoring plot and are shown in **Table 3.1**. The VIS across all sites were broadly similar, ranging from 61.8 to 88.2, and generally high reflecting the relatively intact nature of the retained vegetation surrounding the Quarry.

All monitoring plots had relatively high composition scores, ranging from 83.1 to 98, which are reflective of high species richness within the monitoring plots. Except for plot BAM04, all plots also had high structure scores, ranging from 75.2 to 99.4, which is reflective of a high foliage cover of the vegetation structural layers which are characteristic of the respective Plant Community Type (PCT). The low structure score at BAM04 (44.2) was the result of a low canopy cover (11 %) within this plot relative to the benchmark (42 %). The low canopy cover at BAM04 is partially due to its location on the margin of the approved vegetation clearing areas and may also be due to its location on an exposed upper slope.

Vegetation function score were broadly similar across all plots, ranging from 59.8 to 70.5, although were generally less than scores for composition or structure. Scores within the range observed are indicative of moderately intact vegetation although with some habitat features absent or reduced. Specifically, the somewhat reduced function scores were the result of few large trees (trees with diameter at breast height > 50 cm), while for plots within PCT 1093 (BAM04 – BAM06) the leaf litter scores (benchmark of 75 %) and the length of fallen logs were also below benchmark (benchmark of 105 m). The habitat features which resulted in the somewhat reduced function scores are the result of long-term vegetation management (large trees and fallen logs can take many decades to develop) and local conditions with fewer large trees likely to be present in exposed upper slopes. The presence of high-threat exotic species, including *Pinus radiata** (Radiata Pine) and *Rubus fruticosus sp agg.* (Blackberry) which have previously been recorded within the Quarry site, can impact the scores for vegetation function. However, the cover of these species was generally low (< 5 %) across all monitoring plots.

The high VIS and generally high scores for composition and structure indicate that retained vegetation within the Quarry site is generally in a relatively intact condition and has not been heavily impacted by ongoing operations at the Quarry. The moderate function scores observed may be the result of historical management of the Quarry site including canopy thinning and firewood collection, but do not appear to be impacted by ongoing operations at the Quarry.



Table 3.1: VIS for floristic monitoring plots

Monitoring plot	PCT	Composition score	Structure Score	Function Score	Vegetation Integrity Score
BAM01	732	98	99.4	70.5	88.2
BAM02	732	81.5	88.8	64.3	77.5
BAM03	732	94.6	89.5	63.2	81.2
BAM04	1093	86.9	44.2	61.6	61.8
BAM05	1093	84.1	75.2	63.3	73.7
BAM06	1093	83.1	77.2	59.8	72.7

Comparison with previous monitoring seasons

Very few meaningful comparisons can be made between data recorded in 2020 and in previous monitoring seasons due to the change in monitoring method. Nonetheless a brief comparison of data in 2020 and previous monitoring seasons is presented below.

Across all monitoring sites, native species richness increased in 2020 compared to previous seasons (**Table 3.2; Figure 3.1**), although this is likely to be a result on the increased area of each monitoring plot (100 m² in previous monitoring seasons and 400 m² in 2020). Similarly, exotic species richness also increased across all plots which is attributed to the increased area of each monitoring plot. The method for estimating the cover of exotic species also varied between previous monitoring seasons (modified Braun-Blanquet system) and that in 2020 (percent foliage cover for each species) and no meaningful comparisons are possible.

Table 3.2: Species richness within monitoring plots

FACTOR	WALLQ1					WALLQ2					WALLQ3					WALLQ4					WALLQ5					WALLQ6								
	2016	2017	2018	2019	2020*	2016	2017	2018	2019	2020*	2016	2017	2018	2019	2020*	2016	2017	2018	2019	2020*	2016	2017	2018	2019	2020*	2016	2017	2018	2019	2020*	2016	2017	2018	2019
No. native species	28	30	37	33	47	17	21	27	22	40	29	27	42	32	54	19	19	24	20	37	16	17	23	17	34	16	6	21	19	35				
No. exotic species	5	2	5	4	14	2	2	2	2	14	2	2	2	2	5	1	2	1	2	6	1	1	1	1	3	0	0	0	0	3				
Total species richness	33	32	42	37	61	19	23	29	24	54	31	29	44	34	59	20	21	25	22	43	17	18	24	18	37	16	16	21	19	38				

*note that 2020 used a different method

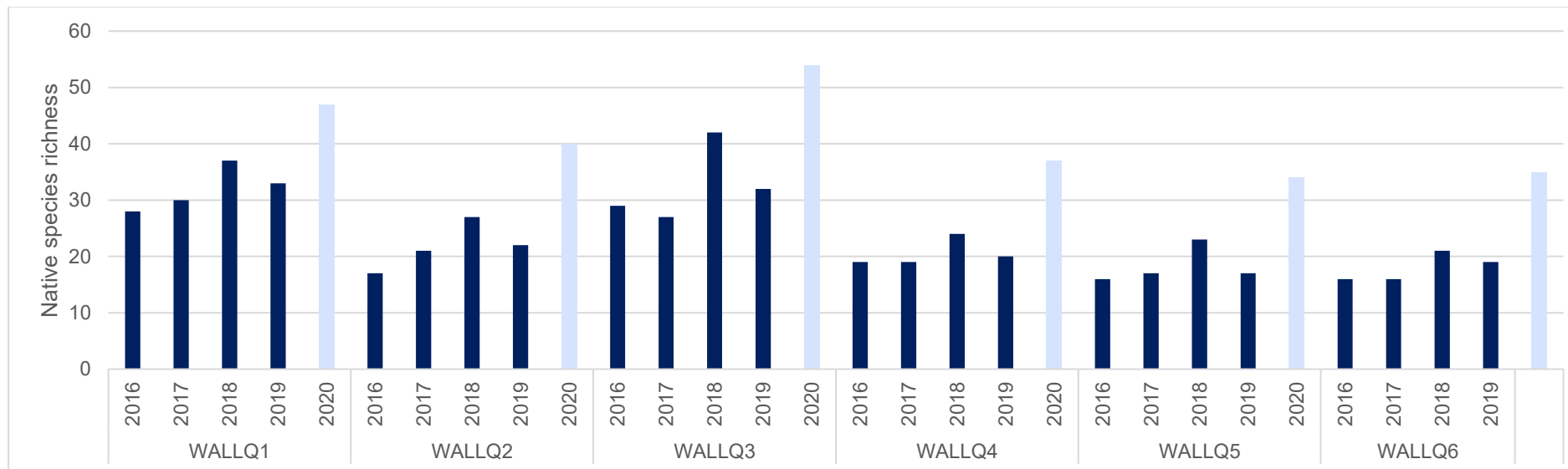


Figure 3.1: Native species richness within monitoring plots

3.1.3 Local fauna

Two native mammals, the skull of a feral pig and 17 birds were opportunistically observed during the monitoring surveys (**Appendix B**). No threatened species listed under the NSW *Biodiversity Conservation Act 2016* (BC Act) were observed.

Observations of local fauna made during the monitoring indicate that the vegetated areas of the Quarry continue to provide habitat for an array of native fauna species.

3.2 Purple Copper Butterfly

No PCBs were detected at the reference site during the survey period. This is likely the result of the late timing of the PCB surveys which was the result of prolonged wet, windy and overcast conditions in much of October 2020.

No PCBs were observed within any of the monitoring sites at the Quarry. However, two butterfly species, Caper White Butterfly (*Belenois java*) and Common Grass-blue (*Zizina otis*), were recorded in addition to a number of other arthropods including moths, spiders, beetles, bees and dragonflies.

Only one ant, namely *Rhytidoponera* sp, was observed on *Bursaria spinosa* subsp. *lasiophylla* during surveys at the quarry. This is not the species with a mutualistic relationship with PCB.

Bursaria spinosa subsp. *lasiophylla* within each of the monitoring sites was observed to be in a healthy condition with mature fruiting individuals and seedlings present. At all sites, *Bursaria spinosa* subsp. *lasiophylla* was observed with new growth shoots up to 8 cm in length. No obvious signs of grazing were apparent.

These monitoring results are largely consistent with monitoring results from 2016-2019, where no PCB or *Anonychomyrma itinerans* were recorded within the Quarry, although *Bursaria spinosa* subsp. *lasiophylla* remained in good health with new growth evident. While the definitive absence of PCB from the Quarry site in 2020 is difficult to determine as surveys in 2020 did not coincide with the optimal time for detection of the species, the absence of *Anonychomyrma itinerans* suggests that PCB remain absent from the Quarry site (noting that PCBs have not been detected within the Quarry during any of the last five years of monitoring).

3.2.1 Opportunities to create additional PCB habitat

As outlined in **Section 3.2** and in previous monitoring reports, habitat for PCB including *Bursaria spinosa* subsp. *lasiophylla* remains within the Quarry site. However, PCBs have not been recorded within this habitat despite targeted surveys for over five years. It is likely that the population(s) which once occurred within the Quarry have become locally extinct. The landscapes surrounding the Quarry, including forestry plantations, cleared agricultural lands and steeply sloping land adjacent to the Cox's River do not represent habitat for the PCB and reduce the chances of habitat on the Quarry site being recolonised by the species. Another factor reducing the likelihood that habitat at the Quarry may be recolonised by PCB is the weak erratic flight of this species and its extremely low dispersal capability (NPWS 2001). Nonetheless, potential habitat for PCBs could be increased by planting *Bursaria spinosa* subsp. *lasiophylla* and thereby increasing the chance that PCBs may recolonise the Quarry site.

The recovery plan for the PCB (NPWS 2001) notes that known habitat for the species includes the following:

- All the known habitat for PCB are located above 900 metres elevation.
- Areas with exposure of *Bursaria spinosa* subsp. *lasiophylla* to direct sunlight for a large portion of the day, due to orientation and / or canopy openness.
- Areas with an aspect and open vegetation that allows a high level of solar radiation. The majority of sites have a westerly to northerly aspect. Sites located on south facing slopes are generally high enough and flat enough to ensure that they also receive full sun.
- Almost all sites are associated with significant levels of disturbance such as mining, roadways or frequent fire that have resulted in an open vegetation structure and an understorey dominated, or well represented, by *Bursaria spinosa* subsp. *lasiophylla*.
- Vegetation within a sparse to moderately dense tree canopy component, with a grassy and sparsely shrubby understorey.

Assessment of suitable locations within the Quarry site for supplementary planting of *Bursaria spinosa* subsp. *lasiophylla*, included both field-based inspections and desktop analysis. However, few locations within the Quarry site were identified as including an open canopy allowing for increased solar exposure, a grassy understorey and an elevation of over 900 m. **Figure 3.2** shows the Foliage Projected Cover (FPC) across the Quarry site based on a time series of Landsat FPC images from 1988-2008 (DPIE 2019). Whilst the exact foliage cover values with such a dataset are unlikely to be highly accurate at the scale of the Quarry site, this dataset does demonstrate the presence of a moderately dense cover of canopy vegetation across the Quarry site (excluding those areas which have been cleared as part of the ongoing quarry operations). Field investigations also identified of small and localised areas in the south-west of the Quarry site where an open canopy occurred over a grassy understorey. However, these areas generally supported healthy stands of *Bursaria spinosa* subsp. *lasiophylla* as sampled at PCB monitoring locations 17 and 18 (**Figure 2.2**). There is an opportunity to undertake further planting of *Bursaria spinosa* subsp. *lasiophylla* in proximity to these locations, however the benefit of these plantings may be limited by the existing occurrence of the species in this area.

The BMP identifies that *Bursaria spinosa* subsp. *lasiophylla* will be included in revegetation activities associated with progressive rehabilitation of the Quarry site. Planting of *Bursaria spinosa* subsp. *lasiophylla* across rehabilitation areas is likely to provide the greatest benefit in terms of creating additional habitat for PCB, particularly when rehabilitation areas are in proximity to existing woodland areas.

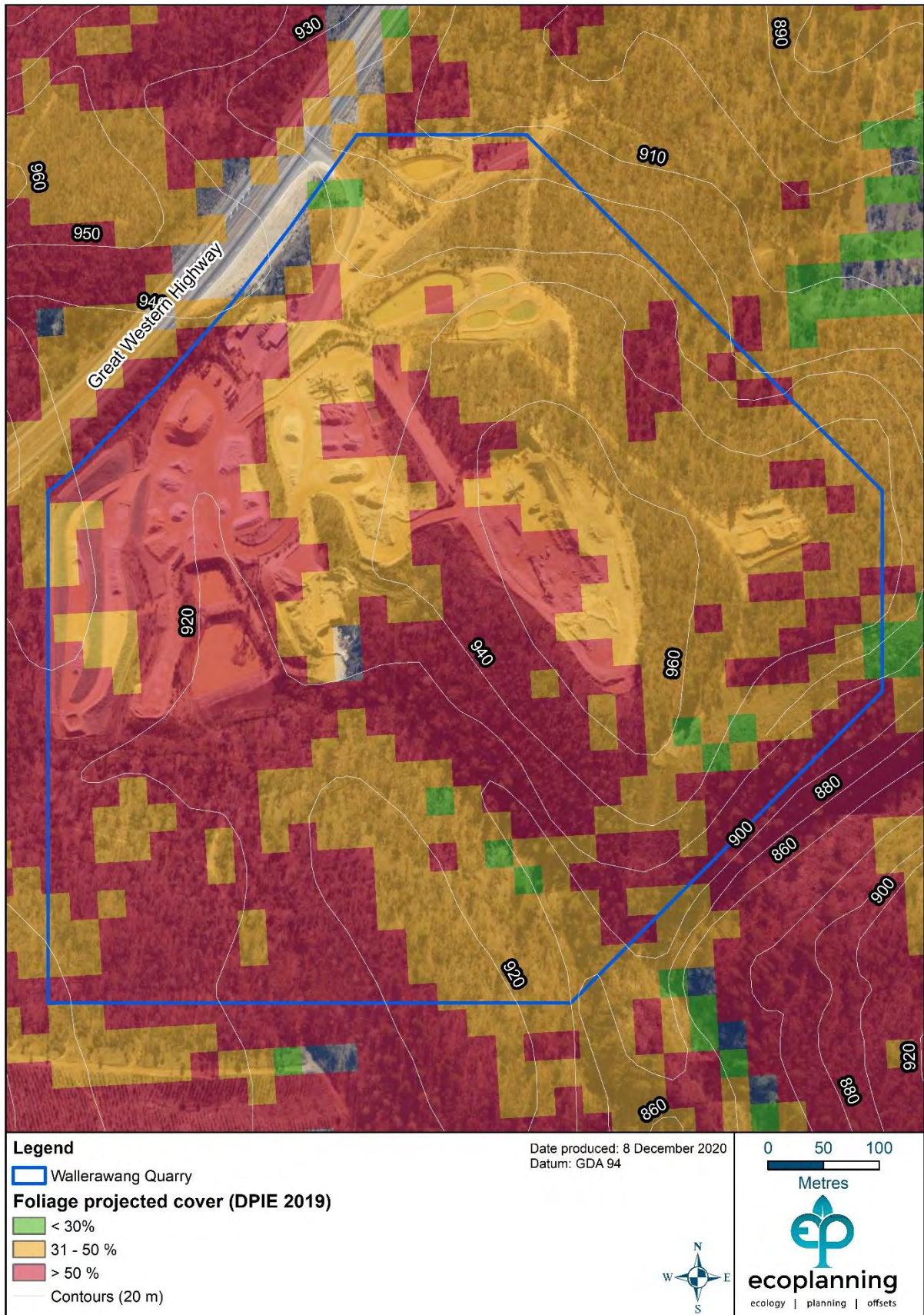


Figure 3.2: Foliage project cover across the Quarry site

4 Conclusions and recommendations

Consistent with the previous years' monitoring report, no large-scale disturbance to vegetation or soils which were attributable to the quarry operations were detected within the areas surrounding the Quarry operations. Observations of local fauna made during the monitoring indicate that the vegetated areas of the Quarry continue to provide habitat for an array of native fauna species. Based upon results from the 2020 monitoring period, no observable or significant trends in the occurrence of specific threatened species or quality / quantity of available habitat has been identified.

Several exotic flora species which have potential to invade native vegetation and outcompete native species were recorded within the Quarry including *Hypericum perforatum** (St Johns Wort), *Pinus radiata** (Radiata Pine) and *Rubus fruticosus* sp. agg.* (Blackberry). These species should be targeted as part of weed control works within the Quarry.

As no PCB or attendant ants (*Anonychomyrma itinerans*) have been recorded within the Quarry during the last five monitoring surveys (Lesryk 2016; 2017; Ecoplanning 2019, 2020), with PCB last detected in the Quarry in September 2002, it is likely that the population of PCB which once occurred within the Quarry is now locally extinct.

Opportunities to create additional habitat for PCBs within conservation areas of the Quarry site by planting *Bursaria spinosa* subsp. *lasiophylla* are limited as a result of the dense canopy cover, or as *Bursaria spinosa* subsp. *lasiophylla* is already present. However, the inclusion of *Bursaria spinosa* subsp. *lasiophylla* in revegetation activities associated with progressive rehabilitation of the Quarry site will provide additional potential habitat for PCBs.

5 References

- Braby, M., (2016). *The complete field guide to butterflies of Australia*. 2nd ed. Victoria: CSIRO Publishing.
- DPIE (2019). Landsat woody extent and foliage projective cover (FPC) Ver 2.1 (25m) 2008. Online dataset accessed at: <https://datasets.seed.nsw.gov.au/dataset/landsat-woody-extent-and-foliage-projective-cover-fpc-ver-2-1-25m-20087355d>
- Ecoplanning (2019). Biodiversity Monitoring 2018 – Walker Quarry, Wallerawang. Unpublished report prepared for Walker Quarries Pty Ltd
- Ecoplanning (2020) Biodiversity Monitoring 2019 – Walker Quarry, Wallerawang. Unpublished report prepared for Walker Quarries Pty Ltd
- Lesryk Environmental (2016). Purple Copper Butterfly Targeted investigation, Walker Quarry, Wallerawang, NSW. Unpublished report prepared for Walker Quarries Pty Ltd.
- Lesryk Environmental (2017). Purple Copper Butterfly Monitoring report #2, Walker Quarry, Wallerawang, NSW. Unpublished report prepared for Walker Quarries Pty Ltd.
- NSW National Parks and Wildlife Services (NPWS) (2001). Bathurst Copper Butterfly (*Paralucia spinifera*) Recovery Plan. Threatened Species Unit, NPWS.
- Umwelt (2020). *Biodiversity Management Plan: Wallerawang Quarry*. Unpublished report prepared for Walker Quarries, dated July 2020.
- Wildthing (1999) Statement of effect on threatened flora and fauna over land proposed for a hard rock quarry within EL4473 near Wallerawang, NSW. Unpublished report prepared for Pacrim Environmental Pty Ltd.

Appendix A Floristic monitoring data

Site Photos



BAM01 – Start transect



BAM01 – End transect



BAM02 – Start transect



BAM02 – Start end



BAM03 – Start transect



BAM03 – End transect



BAM04 – Start transect



BAM04 – End transect



BAM05 – Start transect



BAM05 – End transect



BAM06 – Start transect



BAM06 – End transect

Plot data

Plot No.	Composition					
	Tree	Shrub	Grass	Forb	Fern	Other
BAM01	3	8	8	24	1	3
BAM02	2	3	9	25	1	0
BAM03	4	10	6	30	0	2
BAM04	2	8	6	18	1	0
BAM05	2	8	8	14	0	0
BAM06	2	6	8	15	1	1

Plot No.	Structure					
	Tree	Shrub	Grass	Forb	Fern	Other
BAM01	23.0	7.0	38.9	14.1	0.1	1.3
BAM02	16.0	1.3	39.3	18.6	0.2	0.0
BAM03	21.0	8.7	11.3	11.5	0.0	0.2
BAM04	11.0	2.4	5.2	10.2	0.1	0.0
BAM05	30.0	2.9	18.9	4.5	0.0	0.0
BAM06	40.0	0.8	4.8	5.8	0.2	0.1

Plot No.	Function										
	Large trees	HBT	Litter cover (%)	Logs (m)	Tree stem 5-10 cm	Tree stem 10-20 cm	Tree stem 20-30 cm	Tree stem 30-50 cm	Tree stem 50-80 cm	regen	High threat exotic
BAM01	1	1	26.0	63.0	1	1	1	1	1	1	0.1
BAM02	0	1	40.0	44.0	1	1	1	1	1	1	0.2
BAM03	0	3	54.0	37.0	1	1	1	1	0	1	0.0
BAM04	0	5	67.0	70.0	1	1	1	1	1	1	2.0
BAM05	0	9	86.0	78.0	1	1	1	1	1	1	2.0
BAM06	1	7	65.0	35.0	1	1	1	1	1	1	5.0

Appendix B Flora and Fauna species list

Flora

Family	Scientific Name	Common name	Growth Form	Foliage cover (%)					
				BAM01	BAM02	BAM03	BAM04	BAM05	BAM06
Anthericaceae	<i>Laxmannia gracilis</i>	Slender Wire Lily	Forb (FG)					0.1	0.1
	<i>Tricoryne elatior</i>	Yellow Autumn-lily	Forb (FG)			0.1		0.1	
Apiaceae	<i>Daucus glochidiatus</i>	Native Carrot	Forb (FG)	0.1					
	<i>Hydrocotyle laxiflora</i>	Stinking Pennywort	Forb (FG)	2	5	1	0.5		0.5
Asphodelaceae	<i>Bulbine bulbosa</i>	Bulbine Lily	Forb (FG)	0.2					
Aspleniaceae	<i>Asplenium flabellifolium</i>	Necklace Fern	Fern (EG)	0.1					
Asteraceae	<i>Brachyscome spp.</i>		Forb (FG)	0.1		0.2			
	<i>Cassinia laevis</i>		Shrub (SG)	0.1			0.1	0.1	0.1
	<i>Cirsium vulgare</i>	Spear Thistle	Exotic	0.1	0.1	0.1	0.1		
	<i>Conyza spp.</i>	A Fleabane	Exotic		1		0.1		
	<i>Coronidium scorpioides</i>	Button Everlasting	Forb (FG)			0.2		0.2	0.1
	<i>Cymbonotus lawsonianus</i>	Bear's Ear	Forb (FG)	0.1	0.1	0.1			
	<i>Euchiton involucratus</i>	Star Cudweed	Forb (FG)			0.1	0.1		
	<i>Euchiton sphaericus</i>	Star Cudweed	Forb (FG)		0.1		0.1		

Family	Scientific Name	Common name	Growth Form	Foliage cover (%)					
				BAM01	BAM02	BAM03	BAM04	BAM05	BAM06
	<i>Hypochaeris glabra</i>	Smooth Catsear	Exotic			0.1	0.1		0.1
	<i>Hypochaeris radicata</i>	Catsear	Exotic	3	1	0.5	0.1	0.1	0.1
	<i>Ozothamnus diosmifolius</i>	White Dogwood	Shrub (SG)				0.2		
	<i>Senecio amygdalifolius</i>		Forb (FG)	0.1					
	<i>Senecio bathurstianus</i>		Forb (FG)	0.2					
	<i>Senecio hispidulus</i>	Hill Fireweed	Forb (FG)		1		0.1		
	<i>Senecio prenanthoides</i>		Forb (FG)	0.1	0.1	0.1	0.1		
	<i>Senecio quadridentatus</i>	Cotton Fireweed	Forb (FG)	0.1	1		0.1		0.1
	<i>Solenogyne gunnii</i>	Solengyne	Forb (FG)		0.1				
	<i>Sonchus asper</i>	Prickly Sowthistle	Exotic	0.1	0.1				
	<i>Tragopogon porrifolius</i> subsp. <i>porrifolius</i>	Salsify	Exotic		0.1				
	<i>Vittadinia cuneata</i>	A Fuzzweed	Forb (FG)	0.1					
	<i>Xerochrysum bracteatum</i>	Golden Everlasting	Forb (FG)	0.1	0.1		0.1		
Boraginaceae	<i>Cynoglossum australe</i>		Forb (FG)	0.5	0.2				
Campanulaceae	<i>Wahlenbergia gracilentia</i>	Annual Bluebell	Forb (FG)		0.2				
Campanulaceae	<i>Wahlenbergia spp.</i>	Bluebell	Forb (FG)				0.1	0.1	

Family	Scientific Name	Common name	Growth Form	Foliage cover (%)					
				BAM01	BAM02	BAM03	BAM04	BAM05	BAM06
	<i>Wahlenbergia stricta</i>	Tall Bluebell	Forb (FG)			0.2			0.3
Caryophyllaceae	<i>Petrorhagia nanteuilii</i>	Proliferous Pink	Exotic	0.1					
	<i>Stellaria pungens</i>	Prickly Starwort	Forb (FG)	3					
Clusiaceae	<i>Hypericum gramineum</i>	Small St John's Wort	Forb (FG)		0.1	0.1	0.1	0.1	
	<i>Hypericum perforatum</i>	St. Johns Wort			0.1				
Colchicaceae	<i>Wurmbea spp.</i>		Forb (FG)	0.1		0.1			
Convolvulaceae	<i>Dichondra repens</i>	Kidney Weed	Forb (FG)	5	5				
Crassulaceae	<i>Crassula sieberiana</i>	Australian Stonecrop	Forb (FG)	0.1					
Cyperaceae	<i>Carex inversa</i>	Knob Sedge	Grass & grasslike (GG)		0.5				
	<i>Lepidosperma gunnii</i>		Grass & grasslike (GG)			0.1		0.5	0.5
	<i>Schoenus apogon</i>	Fluke Bogrush	Grass & grasslike (GG)	0.1					
Dilleniaceae	<i>Hibbertia obtusifolia</i>	Hoary Guinea Flower	Shrub (SG)			0.1	0.5		0.2
Droseraceae	<i>Drosera peltata</i>	A Sundew	Forb (FG)			0.1	0.1		
Ericaceae	<i>Acrotriche serrulata</i>	Honeypots	Shrub (SG)	0.2		0.2			
	<i>Brachyloma daphnoides</i>	Daphne Heath	Shrub (SG)			0.1	0.3		0.1

Family	Scientific Name	Common name	Growth Form	Foliage cover (%)					
				BAM01	BAM02	BAM03	BAM04	BAM05	BAM06
	<i>Leucopogon attenuatus</i>	A Beard-heath	Shrub (SG)					0.1	
	<i>Leucopogon virgatus</i>		Shrub (SG)			0.1	0.1		
	<i>Lissanthe strigosa</i>	Peach Heath	Shrub (SG)	0.5	1			0.1	
	<i>Monotoca scoparia</i>		Shrub (SG)	0.1		2			
Fabaceae (Faboideae)	<i>Bossiaea buxifolia</i>		Forb (FG)			0.1			
	<i>Desmodium gunnii</i>	Slender Tick-trefoil	Forb (FG)		0.1				
	<i>Dillwynia phyllicoides</i>	Parrot-pea	Shrub (SG)			0.5	1	0.2	0.2
	<i>Glycine clandestina</i>	Twining glycine	Other (OG)			0.1			
	<i>Glycine tabacina</i>	Variable Glycine	Other (OG)	0.1					
	<i>Gompholobium huegelii</i>	Pale Wedge Pea	Shrub (SG)			0.1			
	<i>Gompholobium uncinatum</i>	Red Wedge Pea	Shrub (SG)						0.1
	<i>Hardenbergia violacea</i>	False Sarsaparilla	Other (OG)						0.1
	<i>Hovea heterophylla</i>		Forb (FG)			0.1	0.1		0.1
	<i>Mirbelia platylobioides</i>		Shrub (SG)				0.1	0.1	0.1
	<i>Pultenaea tuberculata</i>		Shrub (SG)					0.2	
	<i>Trifolium arvense</i>	Haresfoot Clover	Exotic	0.1					

Family	Scientific Name	Common name	Growth Form	Foliage cover (%)					
				BAM01	BAM02	BAM03	BAM04	BAM05	BAM06
	<i>Trifolium glomeratum</i>	Clustered Clover	Exotic	0.1	0.1				
	<i>Vicia spp.</i>	Vetch	Exotic	0.1					
Fabaceae (Mimosoideae)	<i>Acacia mearnsii</i>	Black Wattle	Shrub (SG)	1	0.1				
	<i>Acacia spp.</i>	Wattle	Shrub (SG)				0.1		
	<i>Acacia ulicifolia</i>	Prickly Moses	Shrub (SG)					0.1	
Gentianaceae	<i>Centaurium erythraea</i>	Common Centaury	Exotic			0.1			
Geraniaceae	<i>Geranium solanderi</i>	Native Geranium	Forb (FG)	0.2	0.2				
Goodeniaceae	<i>Goodenia bellidifolia</i>		Forb (FG)				1		0.1
	<i>Goodenia hederacea</i>	Ivy Goodenia	Forb (FG)				0.5	1	1
Haloragaceae	<i>Gonocarpus tetragynus</i>	Poverty Raspwort	Forb (FG)		0.5	0.2		0.5	0.1
	<i>Gonocarpus teucrioides</i>	Germander Raspwort	Forb (FG)	0.1			1		
Iridaceae	<i>Patersonia sericea</i>	Silky Purple-Flag	Forb (FG)				1	1	2
Lamiaceae	<i>Ajuga australis</i>	Austral Bugle	Forb (FG)	0.1		0.5			
	<i>Mentha satureioides</i>	Native Pennyroyal	Forb (FG)		1				
Lauraceae	<i>Cassytha glabella</i>		Other (OG)			0.1			
Lomandraceae	<i>Lomandra filiformis</i>	Wattle Matt-rush	Grass & grasslike (GG)	3	10	5	1	1	0.5

Family	Scientific Name	Common name	Growth Form	Foliage cover (%)					
				BAM01	BAM02	BAM03	BAM04	BAM05	BAM06
	<i>Lomandra longifolia</i>	Spiny-headed Mat-rush	Grass & grasslike (GG)		0.3		0.2	15	1
	<i>Lomandra multiflora subsp. multiflora</i>	Many-flowered Mat-rush	Grass & grasslike (GG)	0.1	0.5	0.1			
Myrtaceae	<i>Eucalyptus bridgesiana</i>	Apple Box	Tree (TG)	10	4	2			
	<i>Eucalyptus dalrympleana</i>	Mountain Gum	Tree (TG)	10		8			
	<i>Eucalyptus dives</i>	Broad-leaved Peppermint	Tree (TG)	3		10	1	5	5
	<i>Eucalyptus mannifera</i>	Brittle Gum	Tree (TG)		12		10	25	35
	<i>Eucalyptus pauciflora</i>	White Sally	Tree (TG)			1			
Orchidaceae	<i>Caladenia gracilis</i>	Musky Caladenia	Forb (FG)			0.1			
	<i>Calochilus spp.</i>		Forb (FG)					0.1	0.1
	<i>Corybas spp.</i>		Forb (FG)			0.1			
	<i>Genoplesium densum</i>	#N/A	Forb (FG)				0.1		
	<i>Microtis parviflora</i>	Slender Onion Orchid	Forb (FG)				0.1	0.1	
	<i>Microtis unifolia</i>	Common Onion Orchid	Forb (FG)			0.1			
	<i>Prasophyllum brevilabre</i>	Short-lipped Leek Orchid	Forb (FG)			0.1			

Family	Scientific Name	Common name	Growth Form	Foliage cover (%)					
				BAM01	BAM02	BAM03	BAM04	BAM05	BAM06
	<i>Pterostylis aciculiformis</i>	Slender Ruddyhood	Forb (FG)						0.1
	<i>Thelymitra nuda</i>	Plain Sun Orchid	Forb (FG)			0.1			
	<i>Thelymitra spp.</i>		Forb (FG)				0.1	0.1	
Oxalidaceae	<i>Oxalis spp.</i>		Forb (FG)	0.1	0.1	0.1			
Phormiaceae	<i>Dianella longifolia</i>	Blueberry Lily	Forb (FG)			0.1			0.1
	<i>Dianella revoluta</i>	Blueberry Lily	Forb (FG)	1	1	5		0.1	
Phyllanthaceae	<i>Poranthera microphylla</i>	Small Poranthera	Forb (FG)			0.2	5	1	1
Pinaceae	<i>Pinus radiata</i>	Radiata Pine	Exotic		0.1		2	2	5
Pittosporaceae	<i>Billardiera scandens</i>	Hairy Apple Berry	Other (OG)	0.2					
	<i>Bursaria spinosa</i>	Native Blackthorn	Shrub (SG)	3	0.2	5			
Plantaginaceae	<i>Plantago gaudichaudii</i>	Narrow Plantain	Forb (FG)	0.5	1	2			
	<i>Plantago lanceolata</i>	Lamb's Tongues	Exotic	0.5	1				
	<i>Veronica calycina</i>	Hairy Speedwell	Forb (FG)		0.1				
	<i>Veronica plebeia</i>	Trailing Speedwell	Forb (FG)					0.1	0.1
Poaceae	<i>Aira spp.</i>	A Hairgrass	Exotic		0.1		0.1		
	<i>Anthosachne scabra</i>	Wheatgrass, Common Wheatgrass	Grass & grasslike (GG)	0.2					

Family	Scientific Name	Common name	Growth Form	Foliage cover (%)					
				BAM01	BAM02	BAM03	BAM04	BAM05	BAM06
	<i>Anthoxanthum odoratum</i>	Sweet Vernal Grass	Exotic	30	20	10			
	<i>Aristida ramosa</i>	Purple Wiregrass	Grass & grasslike (GG)					0.5	0.1
	<i>Austrostipa spp.</i>	A Speargrass	Grass & grasslike (GG)	10					
	<i>Briza maxima</i>	Quaking Grass	Exotic	0.1	0.1				
	<i>Bromus molliformis</i>	Soft Brome	Exotic	0.1					
	<i>Dichelachne micrantha</i>	Shorthair Plumegrass	Grass & grasslike (GG)		1	1	0.5	0.2	0.5
	<i>Echinopogon caespitosus</i>	Bushy Hedgehog-grass	Grass & grasslike (GG)				0.5	0.2	0.1
	<i>Echinopogon ovatus</i>	Forest Hedgehog Grass	Grass & grasslike (GG)	0.5	1	0.1			
	<i>Microlaena stipoides</i>	Weeping Grass	Grass & grasslike (GG)	5	15		1	0.5	
	<i>Poa sieberiana</i>	Snowgrass	Grass & grasslike (GG)	20	10	5	2	1	2
	<i>Rytidosperma pallidum</i>	Redanther Wallaby Grass; Silvertop Wallaby Grass	Grass & grasslike (GG)			15	20	5	15
	<i>Rytidosperma spp.</i>		Grass & grasslike (GG)		1				0.1
	<i>Vulpia spp.</i>	Rat's-tail Fescue	Exotic					0.1	

Family	Scientific Name	Common name	Growth Form	Foliage cover (%)					
				BAM01	BAM02	BAM03	BAM04	BAM05	BAM06
Polygonaceae	<i>Rumex brownii</i>	Swamp Dock	Forb (FG)		0.1				
Primulaceae	<i>Lysimachia arvensis</i>	Scarlet Pimpernel		0.1	0.2				
Proteaceae	<i>Persoonia linearis</i>	Narrow-leaved Geebung	Shrub (SG)			0.5		2	
Pteridaceae	<i>Cheilanthes sieberi</i>	Rock Fern	Fern (EG)		0.2		0.1		0.2
Ranunculaceae	<i>Clematis aristata</i>	Old Man's Beard	Other (OG)	1					
Rosaceae	<i>Acaena novae-zelandiae</i>	Bidgee-widgee	Forb (FG)		0.3				
	<i>Acaena ovina</i>	Acaena	Forb (FG)	0.1	0.1				
	<i>Acaena spp.</i>	Sheep's Burr	Forb (FG)			0.1			
	<i>Rosa rubiginosa</i>	Sweet Briar	Exotic	0.1					
	<i>Rubus fruticosus sp. agg.</i>	Blackberry complex	Exotic	0.1	0.1				
	<i>Rubus parvifolius</i>	Native Raspberry	Shrub (SG)	0.1					
Rubiaceae	<i>Asperula cunninghamii</i>	Twining Woodruff	Forb (FG)		1				
	<i>Galium spp.</i>		Forb (FG)			0.1			
	<i>Opercularia diphylla</i>	Stinkweed	Forb (FG)			0.1		0.1	0.1
Stackhousiaceae	<i>Stackhousia monogyna</i>	Creamy Candles	Forb (FG)			0.1			
Stylidiaceae	<i>Stylidium graminifolium</i>	Grass Triggerplant	Forb (FG)			0.1			

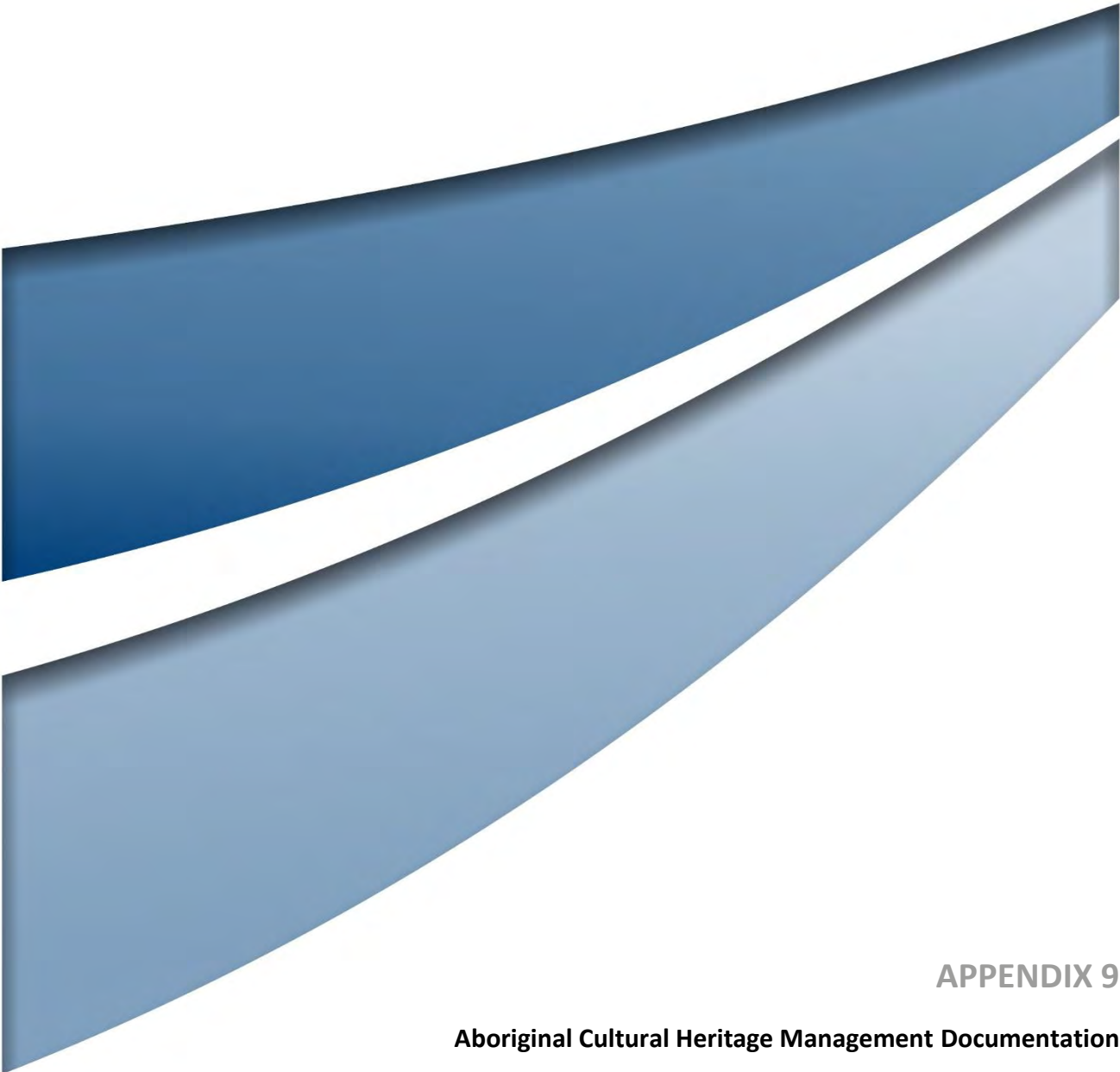
Family	Scientific Name	Common name	Growth Form	Foliage cover (%)					
				BAM01	BAM02	BAM03	BAM04	BAM05	BAM06
Thymelaeaceae	<i>Pimelea curviflora</i>	Rice Flower	Shrub (SG)			0.1			
Violaceae	<i>Melicytus dentatus</i>	Tree Violet	Shrub (SG)	2					
	<i>Viola betonicifolia</i>	Native Violet	Forb (FG)	0.1	0.1	0.1			

Fauna

Common name	Scientific name	Status (BC Act)	2020 monitoring	Previously recorded#
MAMMALS				
Common Wombat	<i>Vombatus ursinus</i>			X
Common Ringtail Possum	<i>Pseudocheirus peregrinus</i>			X
Eastern Grey Kangaroo	<i>Macropus giganteus</i>		X	X
Common Wallaroo	<i>Macropus robustus</i>			X
Swamp Wallaby	<i>Wallabia bicolor</i>		X	X
Yellow-bellied Sheathtail-bat	<i>Saccolaimus flaviventris</i>	V		X
Large Forest Bat	<i>Vespadelus darlingtoni</i>			X
* Fox	<i>Vulpes vulpes</i>			X
* Feral Cat	<i>Felis catus</i>			X
* Rabbit	<i>Oryctolagus cuniculus</i>			X
* Pig	<i>Sus scrofa</i>		X (skull only)	
AVES (BIRDS)				
Yellow-rumped Thornbill	<i>Acanthiza chrysorrhoa</i>			X
Striated Thornbill	<i>Acanthiza lineata</i>			X
Brown Thornbill	<i>Acanthiza pusilla</i>			X
Buff-rumped Thornbill	<i>Acanthiza reguloides</i>			X
Eastern Spinebill	<i>Acanthorhynchus tenuirostris</i>		X	X
Grey Goshawk	<i>Accipiter novaehollandiae</i>			X
Australian King Parrot	<i>Alisterus scapularis</i>		X	X
Pacific Black Duck	<i>Anas superciliosa</i>			X
Red Wattlebird	<i>Anthochaera carunculata</i>			X
Brush Wattlebird	<i>Anthochaera chrysoptera</i>			X
Wedge-tailed Eagle	<i>Aquila audax</i>			X
Fan-tailed Cuckoo	<i>Cacomantis flabelliformis</i>			X
Pallid Cuckoo	<i>Cacomantis pallidus</i>			X
Gang-gang Cockatoo	<i>Callocephalon fimbriatum</i>	V		X
Yellow-tailed Black Cockatoo	<i>Calyptorhynchus funereus</i>		X	X
Australian Wood Duck	<i>Chenonetta jubata</i>			X
Spotted Quail-thrush	<i>Cinclosoma punctatum</i>			X
Red-browed Treecreeper	<i>Climacteris erythrops</i>			X
Grey Shrike-thrush	<i>Colluricincla harmonica</i>			X
Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>		X	X
White-winged Chough	<i>Corcorax melanorhamphos</i>		X	X
White-throated Treecreeper	<i>Cormobates leucophaea</i>		X	X
Australian Raven	<i>Corvus coronoides</i>		X	X
Australian Magpie	<i>Cracticus tibicen</i>		X	X
Grey Butcherbird	<i>Cracticus torquatus</i>		X	X
Laughing Kookaburra	<i>Dacelo novaeguineae</i>		X	X

Common name	Scientific name	Status (BC Act)	2020 monitoring	Previously recorded#
Varied Sittella	<i>Daphoenositta chrysoptera</i>	V		X
Eastern Yellow Robin	<i>Eopsaltria australis</i>			X
Dollarbird	<i>Eurystomus orientalis</i>			X
White-throated Gerygone	<i>Gerygone albogularis</i>			X
Welcome Swallow	<i>Hirundo neoxena</i>			X
Yellow-faced Honeyeater	<i>Lichenostomus chrysops</i>			X
White-eared Honeyeater	<i>Lichenostomus leucotis</i>			X
Superb Fairy-wren	<i>Malurus cyaneus</i>		X	X
Brown-headed Honeyeater	<i>Melithreptus brevirostris</i>			X
White-naped Honeyeater	<i>Melithreptus lunatus</i>			X
Restless Flycatcher	<i>Myiagra inquieta</i>			X
Leaden Flycatcher	<i>Myiagra rubecula</i>			X
Red-browed Finch	<i>Neochmia temporalis</i>			X
Rufous Whistler	<i>Pachycephala rufiventris</i>			X
Spotted Pardalote	<i>Pardalotus punctatus</i>			X
Striated Pardalote	<i>Pardalotus striatus</i>			X
Scarlet Robin	<i>Petroica boodang</i>	V		X
Red-capped Robin	<i>Petroica goodenovii</i>			X
Rose Robin	<i>Petroica rosea</i>			X
Noisy Friarbird	<i>Philemon corniculatus</i>		X	X
New Holland Honeyeater	<i>Phylidonryis novaehollandiae</i>			X
Crimson Rosella	<i>Platycercus elegans</i>		X	X
Eastern Rosella	<i>Platycercus eximius</i>		X	X
Tawny Frogmouth	<i>Podargus strigoides</i>			X
Grey Fantail	<i>Rhipidura albiscapa</i>		X	X
Willie Wagtail	<i>Rhipidura leucophrys</i>		X	X
White-browed Scrubwren	<i>Sericornis frontalis</i>		X	X
Pied Currawong	<i>Strepera graculina</i>			X
Grey Currawong	<i>Strepera versicolor</i>			X
Sacred Kingfisher	<i>Todiramphus sanctus</i>			X
Silvereye	<i>Zosterops lateralis</i>			X
AMPHIBIANS				
Common Eastern Froglet	<i>Crinia signifera</i>			X
Bleating Tree Frog	<i>Litoria dentata</i>			X
REPTILES				
Copper-tailed Skink	<i>Ctenotus taeniolatus</i>			X
Pale-flecked Garden Sunskink	<i>Lampropholis guichenoti</i>			X
Jacky Lizard	<i>Amphibolurus muricatus</i>			X

* denotes an introduced species; V – listed as 'Vulnerable' under the NSW *Biodiversity Conservation Act 2016* (BC Act); # Wildthing Consultants (1999), Lesryk Environmental (2016; 2017) and Ecoplanning (2020).



APPENDIX 9

Aboriginal Cultural Heritage Management Documentation

- 1 This form must be completed following impacts to AHIMS sites that are:
 - a) a result of test excavation carried out in accordance with the *Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW*
 - b) authorised by an Aboriginal Heritage Impact Permit (AHIP) issued by the Office of Environment and Heritage (OEH)
 - c) undertaken for the purpose of complying with Director General's Requirements issued by the Department of Planning and Infrastructure (DP&I) for:
 - State Significant Development (SSD - Part 4),
 - State Significant Infrastructure (SSI - Part 5.1), or
 - A Major Project (Part 3A - now repealed) under the *Environmental Planning and Assessment Act 1979 (EP&A Act)*, or
 - d) authorised by a SSD/SSI/Part 3A consent/approval under the EP&A Act.
- 2 Completed forms must be submitted to the AHIMS Registrar (www.environment.nsw.gov.au/contact/AHIMSRegistrar.htm).
- 3 This form is intended to complement (not replace) the AHIMS Site Recording Form. Where there is a need to provide detailed information about the nature of a site, use the AHIMS Site Recording Form.
- 4 This form does not replace the need to submit reports to OEH (as a condition of an AHIP or SSD/SSI/Part 3A consent/approval)
This form must be submitted in addition to any reports.

AHIMS site ID:

Date recorded:

Site impact authorisation (select one)	Reference numbers, dates
<input type="checkbox"/> Archaeological Code (The impacts to this site were the result of test excavation carried out in accordance with the <i>Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW</i> .)	Date OEH was notified (under requirement 15c of the Code): <input type="text"/> OEH Regional office notified: <input type="text"/>
<input type="checkbox"/> AHIP (The impacts to this site were authorised by an AHIP.)	AHIP number: <input type="text"/> Date issued/signed: <input type="text"/> AHIMS permit ID/number: <input type="text"/>
<input type="checkbox"/> SSD/SSI/Part 3A application (The impacts to this site were undertaken for the purposes of complying with Director General's Requirements issued by the DP&I)	Project number: <input type="text" value="344-11"/> Date Director General's Requirements issued: <input type="text" value="11-06-2019"/>
<input checked="" type="checkbox"/> SSD/SSI/Part 3A approved project (The impacts to this site were authorised by a consent/approval under Parts 4/5.1/3A of the EP&A Act.)	or Date of project approval: <input type="text" value="26-12-2020"/>

Site status following impacts:

- Not a site (The investigations concluded that this is not a site.)
 Valid site (The investigations confirmed that this is an Aboriginal site.)
 Partially destroyed (The site was partially destroyed following authorised impacts; a portion of the site remains in situ.)
 Destroyed (The site was completely destroyed following authorised impacts.)

Site Location Information:

Site name:

Easting: Northing: Coordinates must be in GDA (MGA)

Horizontal Accuracy (m):

Zone: Location method:

Recorder Information:

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Foster	Taylor
Organisation:	OzArk Environment and Heritage	
Address:	145 Wingewarra Street, Dubbo	
Phone:	0411120545	E-mail: Taylor@ozarkehm.com.au

Location map

Clearly demarcate the original AHIMS site boundary, show the boundaries of impacted areas and the areas where the site remains in situ. Display map coordinates.



Site contents information

open/closed site:

Site condition:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
1. <input type="text" value="Artefact"/>	<input type="text" value="22"/>	<input type="text" value="65"/>	<input type="text" value="27"/>

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar Length (cm)	Scar Width (cm)
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Scar shape	<input type="text"/>		Tree Species <input type="text"/>

Description:

Originally recorded in 2000 by Silcox, the site comprises of artefacts manufactured from quartz, mudstone and volcanics. It is located in an area that is permanently fenced off, and is situated on a gentle to moderate slope, within a mid-slope landform.

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
2. <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar Length (cm)	Scar Width (cm)
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Scar shape	<input type="text"/>		Tree Species <input type="text"/>

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
3. <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar Length (cm)	Scar Width (cm)
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Scar shape	<input type="text"/>		Tree Species <input type="text"/>

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
4. <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar Length (cm)	Scar Width (cm)
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Scar shape	<input type="text"/>		Tree Species <input type="text"/>

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
5. <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar Length (cm)	Scar Width (cm)
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Scar shape	<input type="text"/>		Tree Species <input type="text"/>

Description:

Other Site Info:

In 2018 a survey by OzArk located up to 16 artefacts. The site was observed as an eroding open artefact scatter to the north of the existing Hoskins Quarry and on the mid sloped, spurred landform of an ephemeral tributary of the Coxs River which is located approximately 500 metres to the southeast.

Methodology and results

Summary of the methodology and results of the activity or works undertaken through the authorised impacts, as relevant to the AHIMS site

The site was salvaged by OzArk archaeologists and members of the Aboriginal community on 20 January 2021 under the terms of the Walkers Quarry Aboriginal Cultural Heritage Management Plan. Surface collection and excavation took place at the site. GSV was low at the time of the salvage. A total of 22 artefacts (predominantly unmodified quartz flakes) were collected during the surface collection and two artefacts (both quartz flakes) were recovered from the six 50 x 50 cm pits excavated.

Management recommendations

Summary of any management recommendations for the AHIMS site

There are no further management requirements for the site as all artefacts that could reasonably be located have been removed from the site location.

Post-investigation significance

Discuss if the scientific/archaeological or cultural significance of the site has changed in light of the results of the investigations or works conducted at the site.

The site has no further scientific or cultural significance.

Additional comments

The salvage was undertaken following approval of Modification 3 of the Quarry (Development Approval No. 344-11-2001).

Site photographs

Include photographs of the authorised impacts activity, as relevant to the AHIMS site. Please keep photo size to a maximum of 200 kb.



Description: View of artefacts from the surface collection



Description: Artefact recovered from Tr1 Sq6. A quartzite.



Description: View north across the western boundary of the site with artefact location



Description: View south across the excavation transect.



View west across site 45-1-2802.

ABORIGINAL CULTURAL HERITAGE SALVAGE REPORT

WALLERAWANG QUARRY MODIFICATION 3

LITHGOW CITY COUNCIL LGA, NSW

APRIL 2021

Report prepared by
OzArk Environment & Heritage
for
Walker Quarries Pty Ltd

OzArk

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DOCUMENT CONTROLS

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Client	Umwelt (Australia) Pty Ltd	
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Acknowledgement

OzArk acknowledge Traditional Owners of the area on which this salvage took place and pay respect to their beliefs, cultural heritage, and continuing connection with the land. We also acknowledge and pay respect to the post-contact experiences of Aboriginal people with attachment to the area and to the elders, past and present, as the next generation of role models and vessels for memories, traditions, culture and hopes of local Aboriginal people.

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1 INTRODUCTION

1.1 PREAMBLE

Walker Quarries has commissioned OzArk Environment & Heritage to undertake the salvage of site 45-1-2802 (WQ1) located at Wallerawang Quarry (the Quarry), near Wallerawang, NSW. The salvage of 45-1-2802 was undertaken according to the *Wallerawang Quarry Modification 3 Project Aboriginal Cultural Heritage Management Plan (ACHMP)*. The ACHMP was approved by the Department of Planning, Industry and Environment (DPIE) on 5 May 2020. The development of the ACHMP followed the issuing of Development Consent for State Significant Development (SSD) Modification 3 to DA 344-11-2001 (the Project) which was approved on 26 February 2020.

1.2 LOCATION OF THE SALVAGE PROGRAM

The Quarry is located at 963 Great Western Highway, located approximately three kilometres (km) south of Wallerawang and 8 km northwest of Lithgow, NSW (**Figure 1-1**). The Quarry is bounded to the northwest by the Great Western Highway, to the east and southeast by existing vegetated land and the Coxs River. The Quarry adjoins the Lidsdale State Forest in the west and southwest, with the western half of the mining lease (ML) boundary being situated within the boundary of the Lidsdale State Forest.

Site 45-1-2802 includes 2,030 square metres of land at the Quarry (**Figure 1-2**), situated on a gentle to moderate slope.

1.3 MODIFICATION 3

Walker Quarries received approval for Modification 3 which includes an extension to ML 1633 to the west on Lot 7071 DP1201227 (Lidsdale State Forest) and south on Lot 7322 DP1149335 (Crown Land). An extension of the extraction area to increase the total resource approved for extraction by an additional 12 to 15 million tonnes. The extended area will allow for the extraction of the high silica, high purity metamorphosed (indurated) quartzose sandstone (quartzite) which is currently exposed and extracted from the open cut, as well as other resources such as hornfels, sandstone, and cobble conglomerate.

Modification 3 will extend the life of the Quarry by 20 years.

Figure 1-1: Map showing the Quarry in relation to Wallerawang and Lithgow.

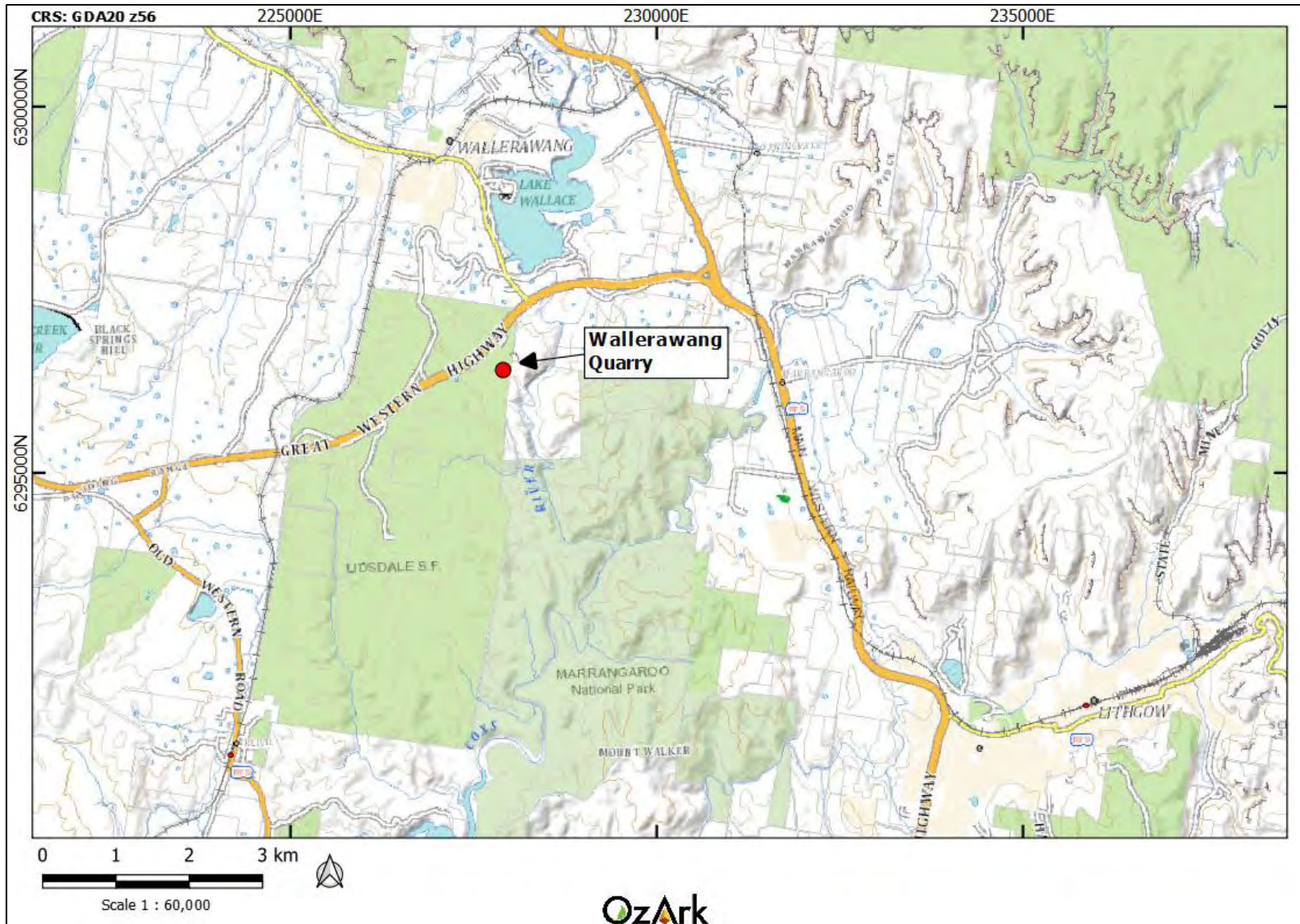


Figure 1-2: Location of site 45-1-2802 (WQ1) within the Quarry.



1.4 BACKGROUND TO THE SALVAGE PROGRAM

The Aboriginal cultural heritage assessment for the Project was undertaken by OzArk (2018) and followed the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (ACHCRs; DECCW 2010a).

The field assessment of Aboriginal archaeological values of the Project was undertaken by OzArk. The survey was completed on Wednesday 29 August 2018 with the assistance of site officers from Bathurst Local Aboriginal Land Council (LALC) and Gundungurra Tribal Council Aboriginal Corporation. The survey was completed in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010b; Code of Practice).

The OzArk (2018) assessment formed the *Aboriginal Cultural Heritage Assessment Report* (ACHAR) that was presented as Appendix 7 of the *Statement of Environmental Effects* (SEE; Umwelt (Australia) Pty Limited 2019).

Following approval of Modification 3 of DA 344-11-2001 in February 2020, the ACHMP was developed with the assistance of OzArk. The ACHMP carried forward the recommendations contained in the ACHAR and established the methodology of the salvage program.

1.5 DATES OF THE SALVAGE PROGRAM

The salvage program was carried out on 20 January 2021. This work completed all the ACHMP commitments regarding archaeological salvage.

1.6 OZARK PERSONNEL

The salvage program was directed by Stephanie Rusden (OzArk Senior Archaeologist) and assisted by Taylor Foster (OzArk Project Archaeologist).

The report was completed by Stephanie Rusden with the assistance of Taylor Foster. Ben Churcher (OzArk Principal Archaeologist) reviewed the document.

1.7 REGISTERED ABORIGINAL PARTIES

As part of OzArk's (2018) assessment, RAPs who hold Aboriginal cultural knowledge relevant to determining the cultural significance of the Project were identified, notified, and involved in consultation and fieldwork.

OzArk undertook consultation in accordance with the Heritage NSW ACHCRs.

As a result, 10 RAPs registered interest in the Project in 2018 (**Table 1-1**).

Table 1-1: List of RAPs.

RAPs	
Warrabinga Native Title Claimants Aboriginal Corporation	Gundungurra Tribal Council Aboriginal Corporation
Mingaan Wiradjuri Aboriginal Corporation	Bathurst LALC
Yurrandaali Cultural Services	Barraby Cultural Services
Murra Bidgee Mullangari Aboriginal Corporation	Merrigarn
Muragadi Heritage Indigenous Corporation	Yulay Cultural Services

1.7.1 Aboriginal Party site officers

The following site officers participated in the salvage:

- Scott Perrin - Warrabinga Native Title Claimants Aboriginal Corporation
- Donald Morgan – Bathurst LALC.

2 SALVAGE METHODOLOGY

As set out in OzArk (2018) and the ACHMP, management of site 45-1-2802 included surface collection and excavation.

2.1 SURFACE ARTEFACT COLLECTION

Surface artefact collection investigations applied the following archaeological methodology:

- All visible artefacts at a site were flagged
- The locations of the flagged artefacts were recorded in a database
- Flagged artefacts were numbered and collected into a bag labelled with the site number, date, and collection details
- Basic attributes were recorded on collected artefacts including raw material, artefact type, artefact integrity, maximum dimension, and stage of reduction
- A descriptive report was prepared with a map of the individual artefact locations within the site boundaries.

2.2 SALVAGE EXCAVATION

Sub-surface excavations were completed at 45-1-2802 to:

- confirm that the highly eroded surface disturbance recorded at the site is apparent at the subsurface level
- to confirm that there are no subsurface archaeological deposits of conservation value present.

OzArk (2018) stipulated that no more than six 50-centimetre (cm) x 50 cm squares should be excavated. Provisions were made for up to three additional excavation squares being excavated, if required, to expand should intact archaeological deposits or archaeological features be encountered near the perimeter of the squares.

The following artefacts attributes were be recorded:

- Artefact type
- Material
- Integrity
- Reduction
- Size
- Rotation

- Platform type
- Platform size
- Termination type.

3 RESULTS OF THE SALVAGE PROGRAM

3.1 SURFACE COLLECTION RESULTS

45-1-2802 (WQ1)

Site Type: Open artefact scatter

GPS Coordinates: GDA Zone 56 E 227905 N 6296556

Location of Site: 190 metres (m) southeast of the Great Western Highway and 485 m northwest of the Coxs River at the Walleraway Quarry. The site is on a mid-slope landform surrounded by quarry activities. A disused vehicle track is located along the western extent of the site.

Previous recordings: Site 45-1-2802 was initially recorded by Silcox (2000) as an artefact scatter consisting of 22 stone artefacts within an area measuring 65 m x 27 m. In 2018, OzArk identified 16 artefacts within the site extent.

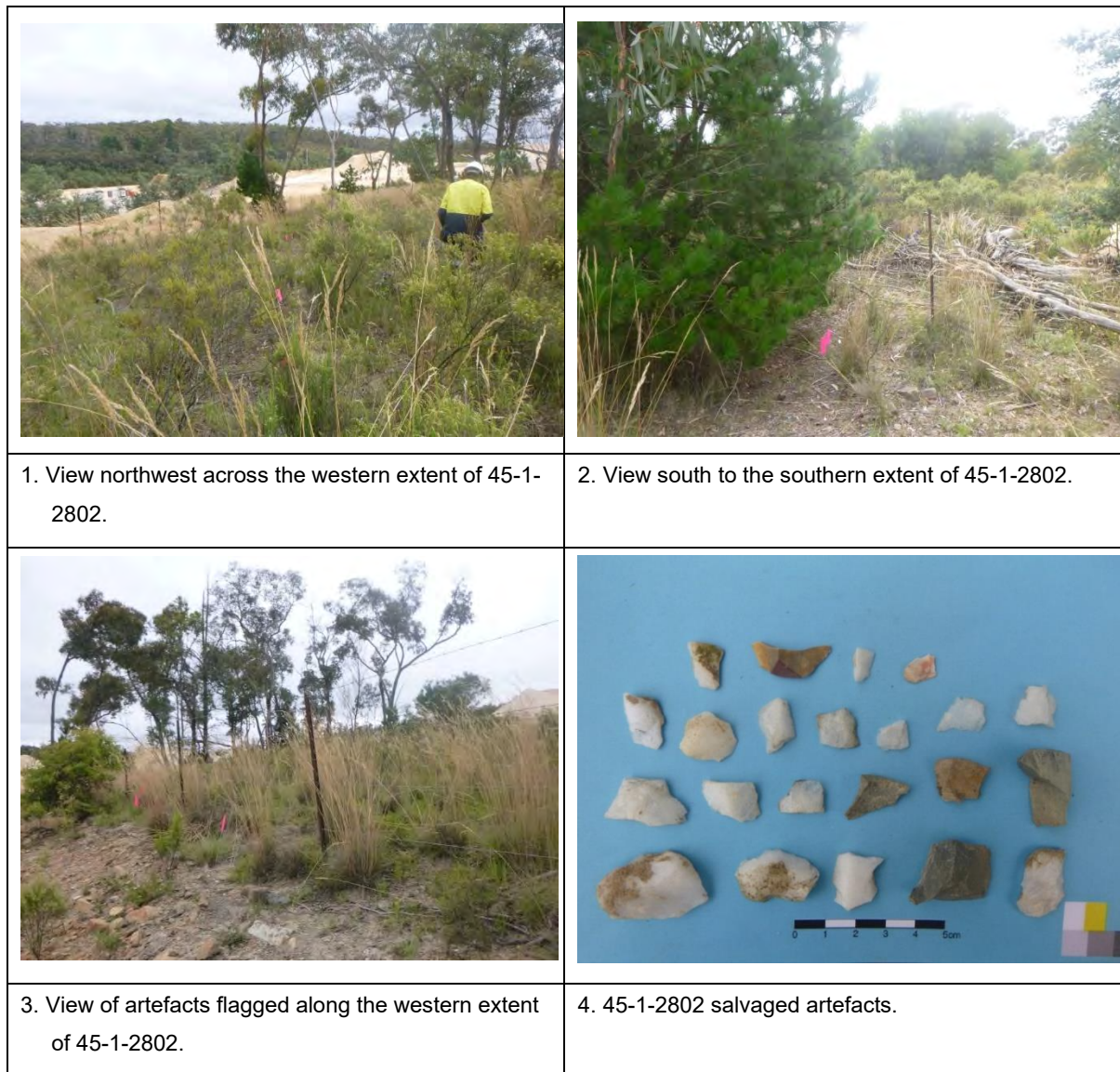
Results of Salvage: A total of 22 artefacts were salvaged via surface collection (**Figure 3-1** and **Table 3-1**). Artefacts were predominately identified within exposures in the southern portion of the site, along a disused vehicle track in the western portion, and eroding out of the cutting along the western boundary of the site (**Figure 3-2**).

Artefact types included 21 flakes and one piece of shatter. Recorded materials were predominantly quartz (n=19); followed by mudstone and chert (n=2) and a volcanic material (n=1).

Over 90% of the surface assemblage displayed no cortex and were recorded to be at a tertiary stage of reduction. Only a small proportion of artefacts (9.1%) were recorded at a secondary stage of reduction where 50% or more of an artefact's surface contained cortex.

Most artefacts recorded in the surface assemblage were complete (n=11) with the most-common break type being the loss of the proximal end of the flake (distal fragments), followed by proximal fragments.

The Aboriginal Site Impact Recording Form (ASIRF) for this site is included in **Appendix 1**.

Figure 3-1: Photographs showing an overview and details of 45-1-2802.**Table 3-1: 45-1-2801 surface artefact attributes.**

Artefact #	Artefact type	Material	Integrity	Reduction	Maximum size (mm)
A1	F	Q	DF	T	20
A2	F	Q	C	T	20
A3	F	Q	DF	T	20
A4	F	Q	PF	T	20
A5	F	Q	C	T	40
A6	F	Q	LB	T	40
A7	S	Q	-	T	20
A8	F	V	C	T	40
A9	F	Q	MF	T	20
A10	F	MS	C	T	20
A11	F	C	DF	S	40

Artefact #	Artefact type	Material	Integrity	Reduction	Maximum size (mm)
A12	F	Q	C	S	40
A13	F	Q	C	T	40
A14	F	Q	DF	T	20
A15	F	Q	C	T	20
A16	F	Q	DF	T	20
A17	F	MS	C	T	20
A18	F	Q	C	T	20
A19	F	Q	PF	T	20
A20	F	Q	DF	T	20
A21	F	Q	C	T	20
A22	F	V	C	T	20

Figure 3-2: Aerial showing location of 45-1-2802 and the recovered artefacts.



3.2 EXCAVATION

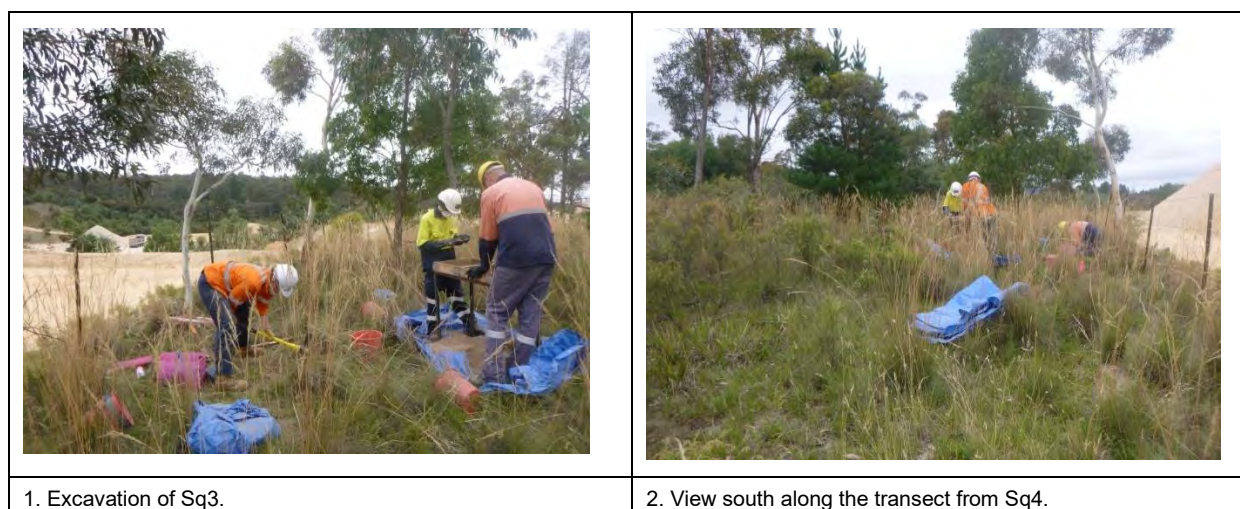
3.2.1 Introduction

One transect was excavated at 45-1-2802 which consisted of six squares. Squares were located 5 m apart, thus one 25 m transect was investigated (**Figure 3-3**).

The transect was placed along the western extent of the site as there were fewer exposed rocks along the surface and a nearby profile showed some potential for A-Horizon soils (**Figure 3-4**).

Figure 3-3: Location of excavation square within the site extent.



Figure 3-4: 45-1-2802: View of the excavation.

1. Excavation of Sq3.

2. View south along the transect from Sq4.

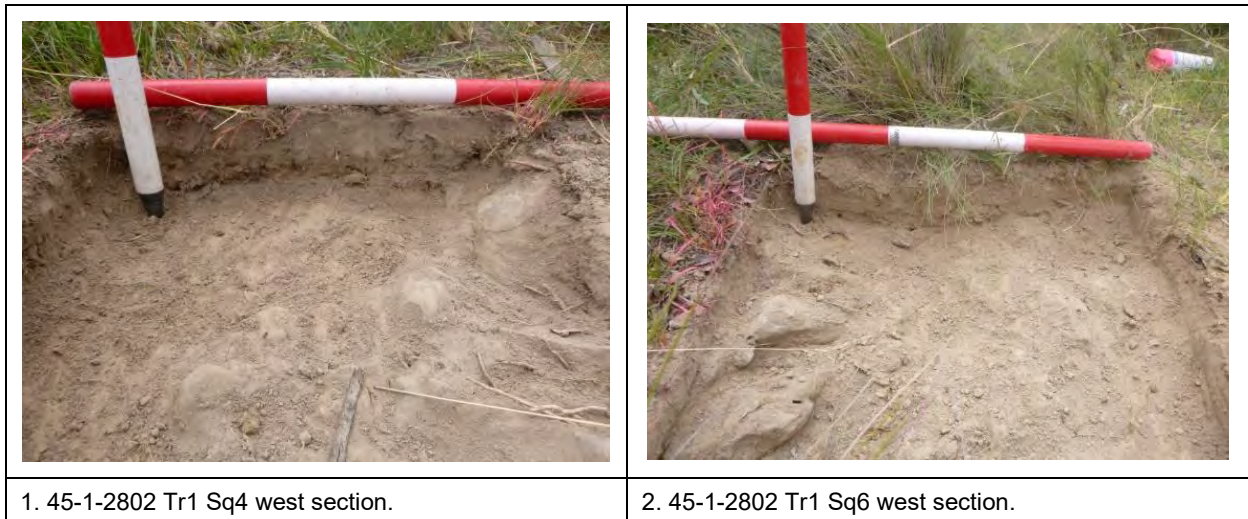
3.2.2 Stratigraphy

Archaeological stratigraphy for each square is displayed in **Table 3-2**. Representative samples of the soil profiles are shown on **Figure 3-5**.

All of the squares had very indistinct soil profiles and the A-Horizon soil layer was very thin (i.e. no greater than 15 cm). Soils were noted as being a silty loam with overlying a heavily rocky outcrop.

Table 3-2: 45-1-2802 excavation log.

Transect/Square	Total depth of Square (cm)	Soil Profile Description
Tr1 Sq1	10	Light brown silty loam. Overlaying extremely rocky/bedrock base.
Tr1 Sq2	5	Light brown silty loam. Overlaying extremely rocky/bedrock base.
Tr1 Sq3	6	Light brown silty loam. Overlaying extremely rocky/bedrock base.
Tr1 Sq4	5	Light brown silty loam. Overlaying extremely rocky/bedrock base.
Tr1 Sq5	15	Light brown silty loam. Overlaying extremely rocky/bedrock base.
Tr1 Sq6	5	Light brown silty loam. Overlaying extremely rocky/bedrock base.

Figure 3-5: 45-1-2802: excavated soil profile sample.

3.2.3 Artefact assemblage

The excavation assemblage from site 45-1-2802 consists of two artefacts: a complete quartz flake recovered from Tr1 Sq6 and a proximal fragment of a quartz flake recovered from Tr1 Sq5. A catalogue for the assemblage is presented in **Table 3-3**, and a photograph of the artefacts are shown on **Figure 3-6**.

This very low density is representative of a general background distribution of artefacts, and from the available evidence, 45-1-2802 has very little potential to meaningfully add to our knowledge concerning past Aboriginal occupation of the area.

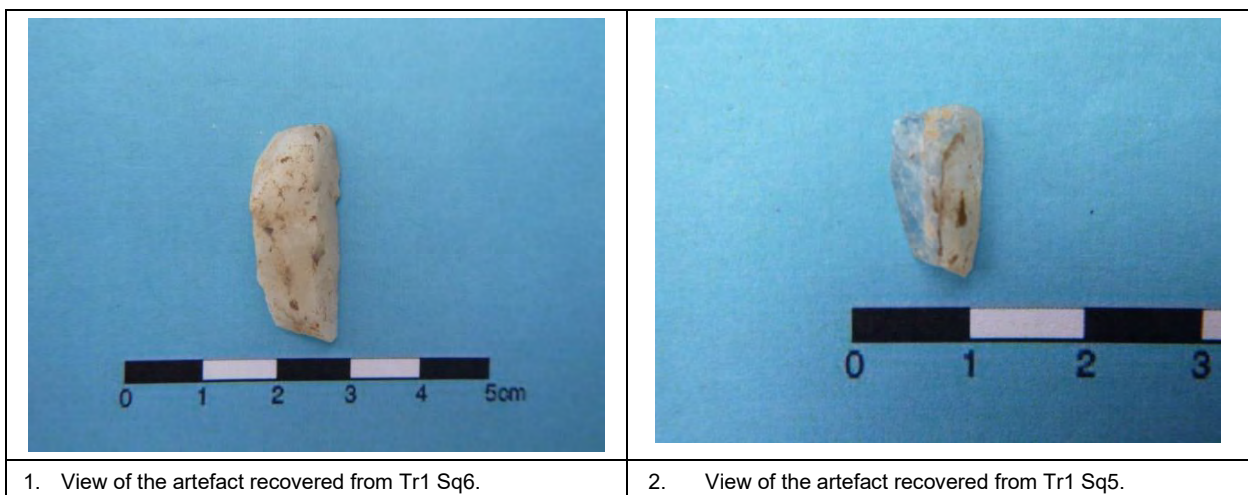
Figure 3-6: 45-1-2802 excavation assemblage.

Table 3-3: 45-1-2802 excavation artefact attributes.

Transect	Square	Spit	Artefact type	Material	Integrity	Reduction	Rotation	Maximum size (mm)	Platform type	Platform size	Termination type
1	5	1	Flake	Quartz	Proximal fragment	Tertiary	Parallel	12	Simple	2	N/A
1	6	1	Flake	Quartz	Complete	Tertiary	Parallel	28	Simple	2	Feather

4 LONG-TERM MANAGEMENT

The artefacts salvaged from site 45-1-2802 were reburied in accordance with Section 5.3.2 of the ACHMP.

The reburial took place following the salvage on 20 January 2021. A site card was submitted to the AHIMS registrar for the reburial location. The AHIMS ID for the reburial location is 45-1-2826.

Details of the reburial located as listed below.

45-1-2826 (WQ1 Reburial Location)

Site Name: WQ1 Reburial Location

AHIMS ID: 45-1-2826

GPS Coordinates: Zone 56 E 228588 N 6296695

Site Location: The reburial location is located along the eastern boundary of Lot 6 DP872230, approximately 30 m west of the Coxs River. The site can be accessed via a dirt track through Wallerawang Quarry (963 Great Western Highway). The reburial location is 825 m east/northeast of the original location of 45-1-2802 (**Figure 4-1**).

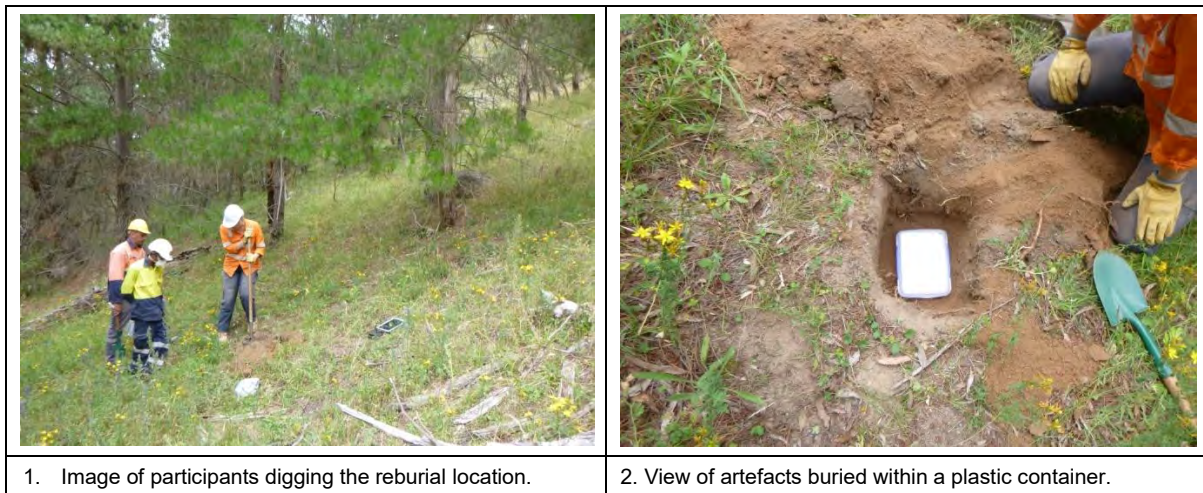
Site Details: The reburial location contains 24 artefacts that were salvaged by OzArk on 20 January 2021 from site 45-1-2802. The salvaged artefacts were sealed in a container along with information about the site. The reburial location is on a moderate slope to the west of Coxs River (see **Figure 4-2** for images of the reburial location). The artefacts were buried at a depth of 30 cm.

The site card for the reburial location is included in **Appendix 2**.

Figure 4-1: Reburial local in relation to the original location of 45-1-2802.




Figure 4-2: Images of the reburial.



REFERENCES

- DECCW 2010a Department of Environment, Climate Change and Water, Sydney (now OEH). 2010. *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*.
- DECCW 2010b Department of Environment, Climate Change and Water, Sydney (now OEH). 2010. *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*.
- OzArk 2018 OzArk 2018. *Aboriginal and Historic Cultural Heritage Assessment Report: Wallerawang Quarry Extension Project*. June 2019. Report to Umwelt (Australia) on behalf of Walker Quarries.
- Silcox 2000 Silcox, R. *Archaeological Assessment for a Proposed Hardrock Quarry, Wallerawang*. Report to Pacrim Environmental Pty Ltd.

APPENDIX 1: 45-1-2802 ASIRF

	Office of Environment & Heritage	Aboriginal Site Impact Recording Form
		AHIMS Registrar PO Box 1967, Hurstville 2220 NSW
<p>1 This form must be completed following impacts to AHIMS sites that are:</p> <p>a) a result of test excavation carried out in accordance with the <i>Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW</i></p> <p>b) authorised by an Aboriginal Heritage Impact Permit (AHIP) issued by the Office of Environment and Heritage (OEH)</p> <p>c) undertaken for the purpose of complying with Director General's Requirements issued by the Department of Planning and Infrastructure (DP&I) for:</p> <ul style="list-style-type: none"> - State Significant Development (SSD - Part 4), - State Significant Infrastructure (SSI - Part 5.1), or - A Major Project (Part 3A - now repealed) under the <i>Environmental Planning and Assessment Act 1979 (EP&A Act)</i>, or <p>d) authorised by a SSD/SSI/Part 3A consent/approval under the EP&A Act.</p> <p>2 Completed forms must be submitted to the AHIMS Registrar (www.environment.nsw.gov.au/contact/AHIMSRegistrar.htm).</p> <p>3 This form is intended to complement (not replace) the AHIMS Site Recording Form. Where there is a need to provide detailed information about the nature of a site, use the AHIMS Site Recording Form.</p> <p>4 This form does not replace the need to submit reports to OEH (as a condition of an AHIP or SSD/SSI/Part 3A consent/approval) This form must be submitted in addition to any reports.</p>		
AHIMS site ID:	45-1-2802	Date recorded:
22-01-2021		
Site impact authorisation (select one)	Reference numbers, dates	
<input type="checkbox"/> Archaeological Code (The impacts to this site were the result of test excavation carried out in accordance with the <i>Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW</i> .)	Date OEH was notified (under requirement 15c of the Code):	
	OEH Regional office notified:	
<input type="checkbox"/> AHIP (The impacts to this site were authorised by an AHIP.)	AHIP number:	
	Date issued/signed:	
	AHIMS permit ID/number:	
<input type="checkbox"/> SSD/SSI/Part 3A application (The impacts to this site were undertaken for the purposes of complying with Director General's Requirements issued by the DP&I)	Project number:	344-11
	Date Director General's Requirements issued:	11-06-2019
	or Date of project approval:	26-12-2020
<input checked="" type="checkbox"/> SSD/SSI/Part 3A approved project (The impacts to this site were authorised by a consent/approval under Parts 4/5.1/3A of the EP&A Act.)		
Site status following impacts:		
<input type="checkbox"/> Not a site (The investigations concluded that this is not a site.)		
<input type="checkbox"/> Valid site (The investigations confirmed that this is an Aboriginal site.)		
<input type="checkbox"/> Partially destroyed (The site was partially destroyed following authorised impacts; a portion of the site remains in situ.)		
<input checked="" type="checkbox"/> Destroyed (The site was completely destroyed following authorised impacts.)		
		1

Site Location Information:

Site name:

Easting: Northing: Coordinates must be in GDA (MGA)

Horizontal Accuracy (m):

Zone: Location method:

Recorder Information:

(The person responsible for the completion and submission of this form)

Title	Surname	First name
<input type="text" value="Ms."/>	<input type="text" value="Foster"/>	<input type="text" value="Taylor"/>
Organisation: <input type="text" value="OzArk Environment and Heritage"/>		
Address: <input type="text" value="145 Wingewarra Street, Dubbo"/>		
Phone: <input type="text" value="0411120545"/>	E-mail: <input type="text" value="Taylor@ozarkehm.com.au"/>	

Location map

Clearly demarcate the original AHIMS site boundary, show the boundaries of impacted areas and the areas where the site remains in situ. Display map coordinates.



Site contents information				open/closed site: <input type="text" value="Open"/>	Site condition: <input type="text" value="Disturbed"/>																
Features:		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)																	
1.	<input type="text" value="Artefact"/>	<input type="text" value="22"/>	<input type="text" value="65"/>	<input type="text" value="27"/>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4" style="text-align: center;">Scarred Trees</th> </tr> <tr> <th style="text-align: center;">Scar Depth (cm)</th> <th style="text-align: center;">Regrowth (cm)</th> <th style="text-align: center;">Scar Length (cm)</th> <th style="text-align: center;">Scar Width (cm)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> </tr> <tr> <td style="text-align: center;">Scar shape</td> <td colspan="2" style="text-align: center;"><input type="text"/></td> <td style="text-align: center;">Tree Species</td> </tr> </tbody> </table>	Scarred Trees				Scar Depth (cm)	Regrowth (cm)	Scar Length (cm)	Scar Width (cm)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Scar shape	<input type="text"/>		Tree Species
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Scar shape	<input type="text"/>		Tree Species																		
Description:																					
Originally recorded in 2000 by Gilcox, the site comprises of artefacts manufactured from quartz, mudstone and volcanics. It is located in an area that is permanently fenced off, and is situated on a gentle to moderate slope, within a mid-slope landform.																					
Features:		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)																	
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Scar shape	<input type="text"/>		Tree Species																		
Description:																					
Other Site Info:	In 2018 a survey by OzArk located up to 16 artefacts. The site was observed as an eroding open artefact scatter to the north of the existing Hoskins Quarry and on the mid sloped, spurred landform of an ephemeral tributary of the Coxs River which is located approximately 500 metres to the southeast.																				

Methodology and results

Summary of the methodology and results of the activity or works undertaken through the authorised impacts, as relevant to the AHIMS site

The site was salvaged by OzArk archaeologists and members of the Aboriginal community on 20 January 2021 under the terms of the Walkers Quarry Aboriginal Cultural Heritage Management Plan. Surface collection and excavation took place at the site. GSV was low at the time of the salvage. A total of 22 artefacts (predominantly unmodified quartz flakes) were collected during the surface collection and two artefacts (both quartz flakes) were recovered from the six 50 x 50 cm pits excavated.

Management recommendations

Summary of any management recommendations for the AHIMS site

There are no further management requirements for the site as all artefacts that could reasonably be located have been removed from the site location.

Post-investigation significance

Discuss if the scientific/archaeological or cultural significance of the site has changed in light of the results of the investigations or works conducted at the site.

The site has no further scientific or cultural significance.

Additional comments

The salvage was undertaken following approval of Modification 3 of the Quarry (Development Approval No. 344-11-2001).

Site photographs

Include photographs of the authorised impacts activity, as relevant to the AHIMS site. Please keep photo size to a maximum of 200 kb.



Description: View of artefacts from the surface collection



Description: Artefact recovered from Tr1 Sqs. A quartz flake.




Description: View north across the western boundary of the site with artefact locations



Description: View south across the excavation transect.

APPENDIX 2: REBURIAL LOCATION SITE CARD

 Office of Environment & Heritage	Aboriginal Site Recording Form AHIMS Registrar PO Box 1967, Hurstville 2220 NSW	
	AHIMS site ID: <input type="text" value="45-1-2826"/>	Date recorded: <input type="text" value="27-01-2021"/>
Site Location Information		
Site name: <input type="text" value="WQ1 Reburial Location"/>		
Easting: <input type="text" value="228586"/>	Northing: <input type="text" value="6298695"/>	Coordinates must be in GDA (MGA)
Horizontal Accuracy (m): <input type="text" value="3"/>		
Zone: <input type="text" value="56"/>	Location method: <input type="text" value="Non-Differential GPS"/>	
Recorder Information <small>(The person responsible for the completion and submission of this form)</small>		
Title <input type="text" value="Ms."/>	Surname <input type="text" value="Foster"/>	First name <input type="text" value="Taylor"/>
Organisation: <input type="text" value="OzArk Environment and Heritage"/>		
Address: <input type="text" value="145 Wingewama Street, Dubbo"/>		
Phone: <input type="text" value="0411120545"/>	E-mail: <input type="text" value="Taylor@ozarkem.com.au"/>	
Site Context Information		
Land Form Pattern: <input type="text" value="Steep Hills"/>	Land Use: <input type="text" value="Forestry"/>	
Land Form Unit: <input type="text" value="Slope"/>	Vegetation: <input type="text" value="Woodland"/>	
Distance to Water (m): <input type="text" value="30"/>	Primary Report: <input type="text" value="Aboriginal Heritage Salvage Report: Wallerawang Quarry Extension"/>	
How to get to the site:	<input type="text" value="The reburial location is located along the eastern boundary of Lot E DP872230, approximately 30 m west of the Coxes River. The site can be accessed via a dirt track through Wallerawang Quarry (963 Great Western Highway)."/>	
Other site information:	<input type="text" value="Refer to the Aboriginal Heritage Salvage Report: Wallerawang Quarry Extension Project for full details of the artefacts salvaged from WQ1 (45-1-2802). The reburial location is 825 metres east/northeast of the original location of WQ1."/>	
1		

Site location map



Site contents information

open/closed site: Site condition:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees			
				Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
1. <input type="text" value="Artefact"/>	<input type="text" value="24"/>	<input type="text" value="5"/>	<input type="text" value="1"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

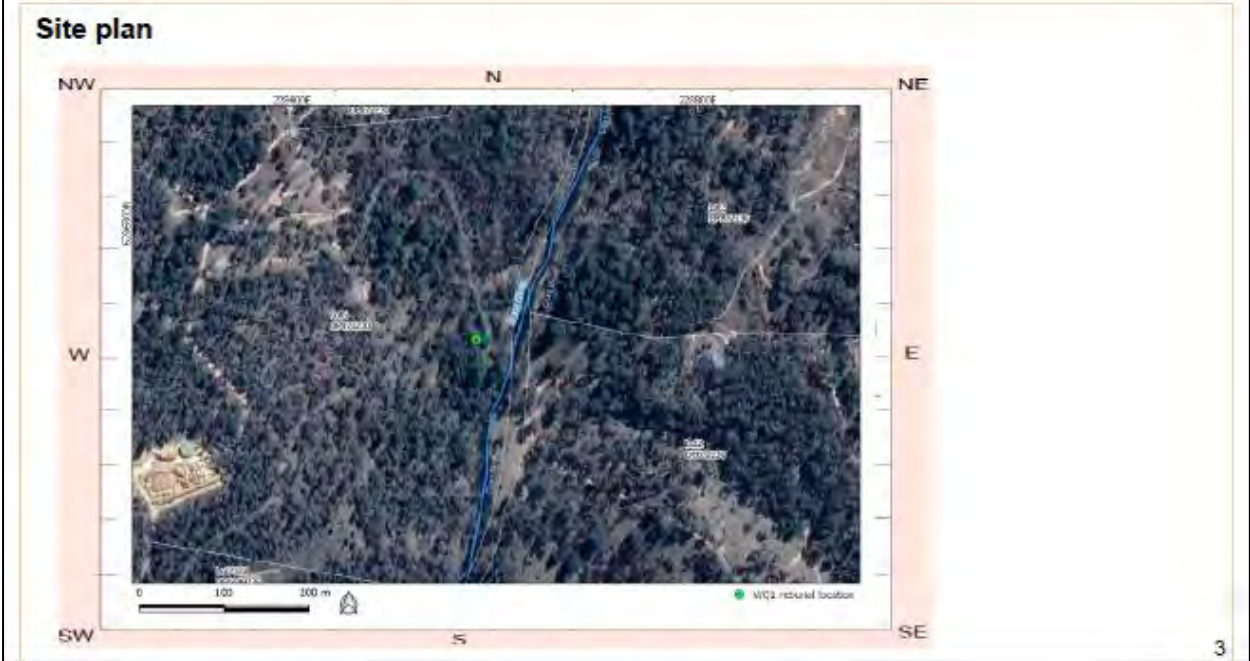
The reburial location contains 24 artefacts that were salvaged by OzArk in January 2021 from site WQ1 (45-1-2802) under the conditions Wallerawang Quarry Modification 3 Protect Aboriginal Cultural Heritage Management Plan. The reburial location is on a moderate slope to the west of Oxley River.

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees			
				Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
2. <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

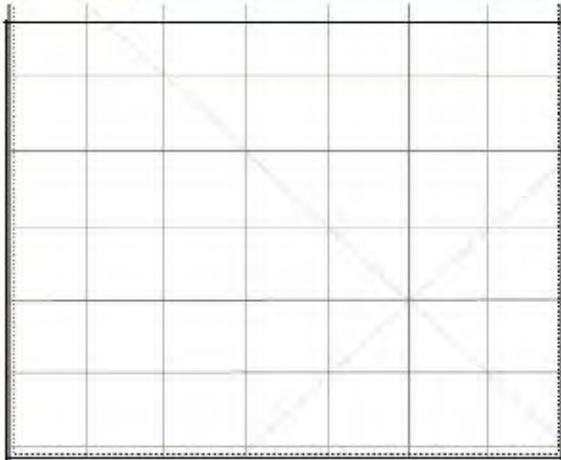
Features:		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees			
3.	<input style="width: 250px; height: 20px;" type="text"/>	<input style="width: 20px; height: 20px;" type="text"/>	<input style="width: 20px; height: 20px;" type="text"/>	<input style="width: 20px; height: 20px;" type="text"/>	Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
Description:								
Features:		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees			
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Description:								
Other Site Info:	refer to the Aboriginal Heritage Salvage report, Wallerawang Quarry Extension Project for full details of the artefacts salvaged from WQ1 (45-1-2852). The reburial location is 825 metres east/northeast of the original location of WQ1.							



Site photographs



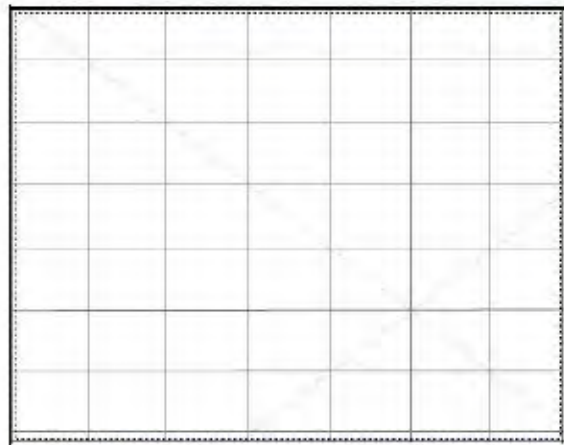
Description:



Description:



Description:



Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title Surname First name

Organisation:

Address:

Phone: E-mail:

AHIMS site ID:

Date recorded:

Site Location Information

Site name:

Easting: Northing: Coordinates must be in GDA (MGA)

Horizontal Accuracy (m):

Zone: Location method:

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
<input type="text" value="Ms."/>	<input type="text" value="Foster"/>	<input type="text" value="Taylor"/>

Organisation:

Address:

Phone: E-mail:

Site Context Information

Land Form Pattern: Land Use:

Land Form Unit: Vegetation:

Distance to Water (m): Primary Report:

How to get to the site:

Other site information:

Site location map



Site contents information

open/closed site:

Site condition:

Features:

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees			
				Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
1. <input type="text" value="Artefact"/>	<input type="text" value="24"/>	<input type="text" value="5"/>	<input type="text" value="5"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

The reburial location contains 24 artefacts that were salvaged by OzArk in January 2021 from site WQ1 (45-1-2802) under the conditions Wallerwang Quarry Modification 3 Project Aboriginal Cultural Heritage Management Plan. The reburial location is on a moderate slope to the west of Coxs River.

Features:

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees			
				Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
2. <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

Features:

3.

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

Features:

4.

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

Features:

5.

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description:

Other Site Info:

Refer to the Aboriginal Heritage Salvage Report: Wallerawang Quarry Extension Project for full details of the artefacts salvaged from WQ1 (45-1-2802). The reburial location is 825 metres east/northeast of the original location of WQ1.

Site plan



Site photographs



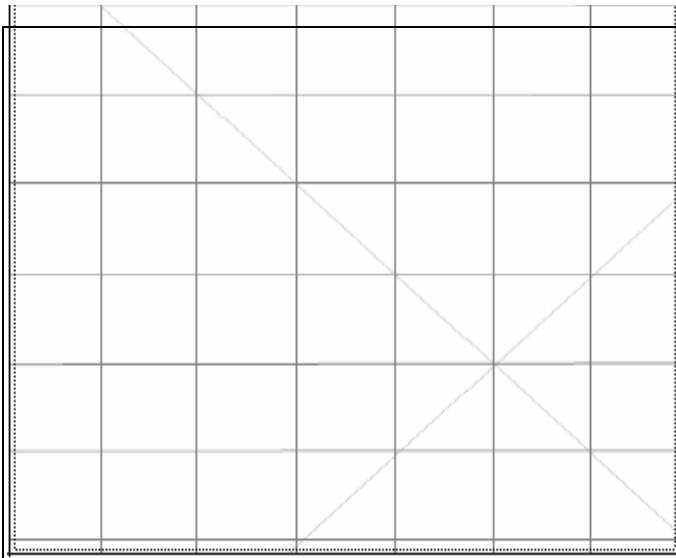
Description:

View east of the reburial site toward Coxs River.

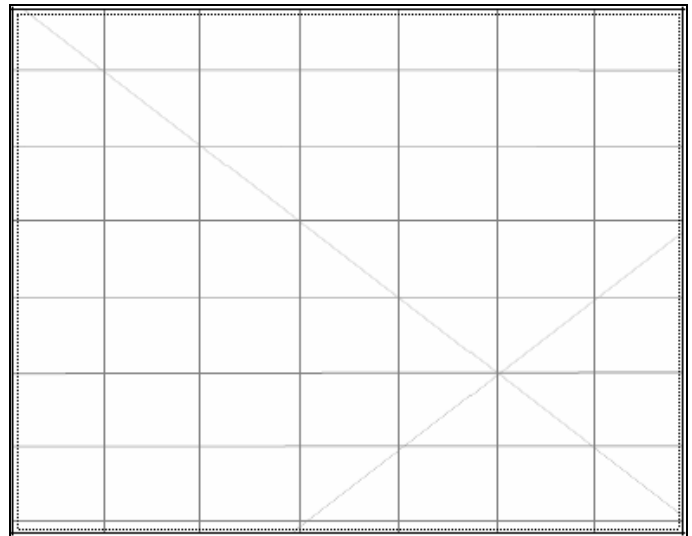


Description:

View of the artefacts being reburied.



Description:



Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title Surname First name

Organisation:

Address:

Phone: E-mail:



APPENDIX 10

Minutes of Wallerawang Quarry Community Consultative Committee

**MINUTES OF WALLERAWANG QUARRY COMMUNITY CONSULTATIVE COMMITTEE
HELD AT THE QUARRY, GREAT WESTERN HIGHWAY WALLERAWANG ON 4th AUGUST
2020.**

PRESENT: Sue Graves (Chairman), John McAuley, Trevor Hoffmann, Johann van der Merwe, Emily Honeysett, Lance Gillespie and Paul Curran.

APOLOGIES: Lauren Stevens (Lithgow Council)

MINUTES OF PREVIOUS Minutes of the previous meeting held 13th November 2019 were approved as a true and correct record.

BUSINESS ARISING FROM LAST MINUTES: No matters arising from previous minutes.

QUARRY OPERATIONS: Have slowly been moving plant equipment lower into the pit over the last 6 months to reduce noise levels from crushing and also to move the machines from line of site off the highway.

Site and Staff are following general regulations for COVID-19 including staggering meal breaks and regular cleaning several times a day. Sanitizer available for all staff and visitors and regular hand cleaning reminders are given.

A site inspection for all Committee members will be arranged.

ENVIRONMENTAL: No environmental incidents were reported since last meeting.

All dams are full due to recent rain and all water used on site is being drawn from our dams.

DEVELOPMENT APPROVAL MODIFICATION: MOD 3 – MOD 3 was approved in February 2020 and a copy is available on Walker Quarries website.

Trevor Hoffmann explained to the committee where the new MOD 3 approved boundaries are. Further clearing to the boundary lines has progressed.

MINING LEASE ML 1633: Walker Quarries are in the process of negotiations with the Wiradjuri tribe regarding Native Title Claims.

COMPLAINTS REGISTER: One noise complaint received regarding the Sand Plant. Bearings have been replaced which reduced the noise levels and a noise monitor has been purchased. Johann van der Merwe and Trevor Hoffmann visited the property owner and he was very satisfied with outcome.

GENERAL BUSINESS: Electrical Power connection to site is in progress with Endeavour Energy.

Sales and production are steadily increasing.

NEXT MEETING: Proposed that the next meeting be held on Tuesday 10th November 2020 at 5pm.

CLOSE: There being no further business the meeting was closed at 1747.

Signed as a true and correct record

CHAIRPERSON

**MINUTES OF WALLERAWANG QUARRY COMMUNITY CONSULTATIVE COMMITTEE
HELD AT THE QUARRY, GREAT WESTERN HIGHWAY WALLERAWANG ON 1st
DECEMBER 2020.**

PRESENT: Sue Graves (Chairman), John McAuley, Trevor Hoffmann, Johann van der Merwe, Emily Honeysett, Cassandra Coleman (Lithgow Council), Lauren Stevens (Lithgow Council).

APOLOGIES: Lance Gillespie, Paul Curran and Brad Boyling.

MINUTES OF PREVIOUS Minutes of the previous meeting held 4th August 2020 were approved as a true and correct record.

**BUSINESS
ARISING FROM
LAST MINUTES:**

ML1633 - Negotiations Re: Native Title are still on going. Site is contained and no entry by Walker Quarries personnel is allowed.

Electricity- Connection to site is 90% completed. Poles have been erected and wires have been strung. Finalisation should be completed Mid-January 2021.

**QUARRY
OPERATIONS:**

Have had larger than normal rainfall over November 2020. There has been no discharge from the dams.

Next blast will be scheduled late December 2020.

New plant equipment has been purchased to accommodate quarry growth.

ENVIRONMENTAL: Dust control management procedures are being maintained and followed accordingly.

Walker Quarries have reseeded stockpile and bund wall areas that aren't growing well.

Our weed spraying program is continually being carried out.

Weather station has been re-calibrated and we are in the process of upgrading.

Dust monitor is being upgraded in line with Management Plans. It will be powered by electricity and impending installation is due February 2021.

Rehabilitation Plan has been recently updated and we are targeting areas around the quarry for re-vegetation including the fence line.

Soil and Water Management Plan is still outstanding with the Department of planning awaiting a response.

**MINING LEASE
ML 1633:**

Nothing new to report for this meeting.

COMPLAINTS REGISTER:

No complaints have been received since the last meeting.

GENERAL BUSINESS:

Walker Quarries have purchased a hand-held Noise Monitor to monitor levels around the quarry if we believe it may be getting louder.

A site visit for Committee Members will be arranged in May 2021 prior to next meeting.

NEXT MEETING:

Proposed that the next meeting be held on Tuesday 4th May 2021 at 5pm.

CLOSE:

There being no further business the meeting was closed at 1750.

Signed as a true and correct record

CHAIRPERSON

**MINUTES OF WALLERAWANG QUARRY COMMUNITY CONSULTATIVE COMMITTEE
HELD AT THE QUARRY, GREAT WESTERN HIGHWAY WALLERAWANG ON 8TH JUNE
2021**

PRESENT: Sue Graves (Chairman), John McAuley, Trevor Hoffmann, Wayne Chapman, Emily Honeysett and Brad Boyling.

APOLOGIES: Lance Gillespie and Cassandra Coleman.

MINUTES OF PREVIOUS Minutes of the previous meeting held 1st December 2020 were approved as a true and correct record.

BUSINESS ARISING FROM LAST MINUTES: To be covered throughout course of the meeting.

QUARRY OPERATIONS: The next blast is scheduled for middle of July 2021.

New Plant and equipment are being purchased as production & sales are increasing.

Current employees are at approx. 18.

Sales were affected by the closure of Bells Line of Road.

ENVIRONMENTAL: Weed spraying will be carried out soon.

Dust Monitoring and Water sampling results are good with no exceedances.

Soil Water Management Plan approved.

An Independent Environmental Audit was carried out 29th April 2021 – Awaiting Final Report.

MINING LEASE ML 1633: Nothing new to report for this meeting.

NATIVE TITLE: Aboriginal Artifacts were relocated under the supervision of OzArk Environmental and Heritage Management and a documented report was received.

COMPLAINTS REGISTER: No complaints have been received since the last meeting.

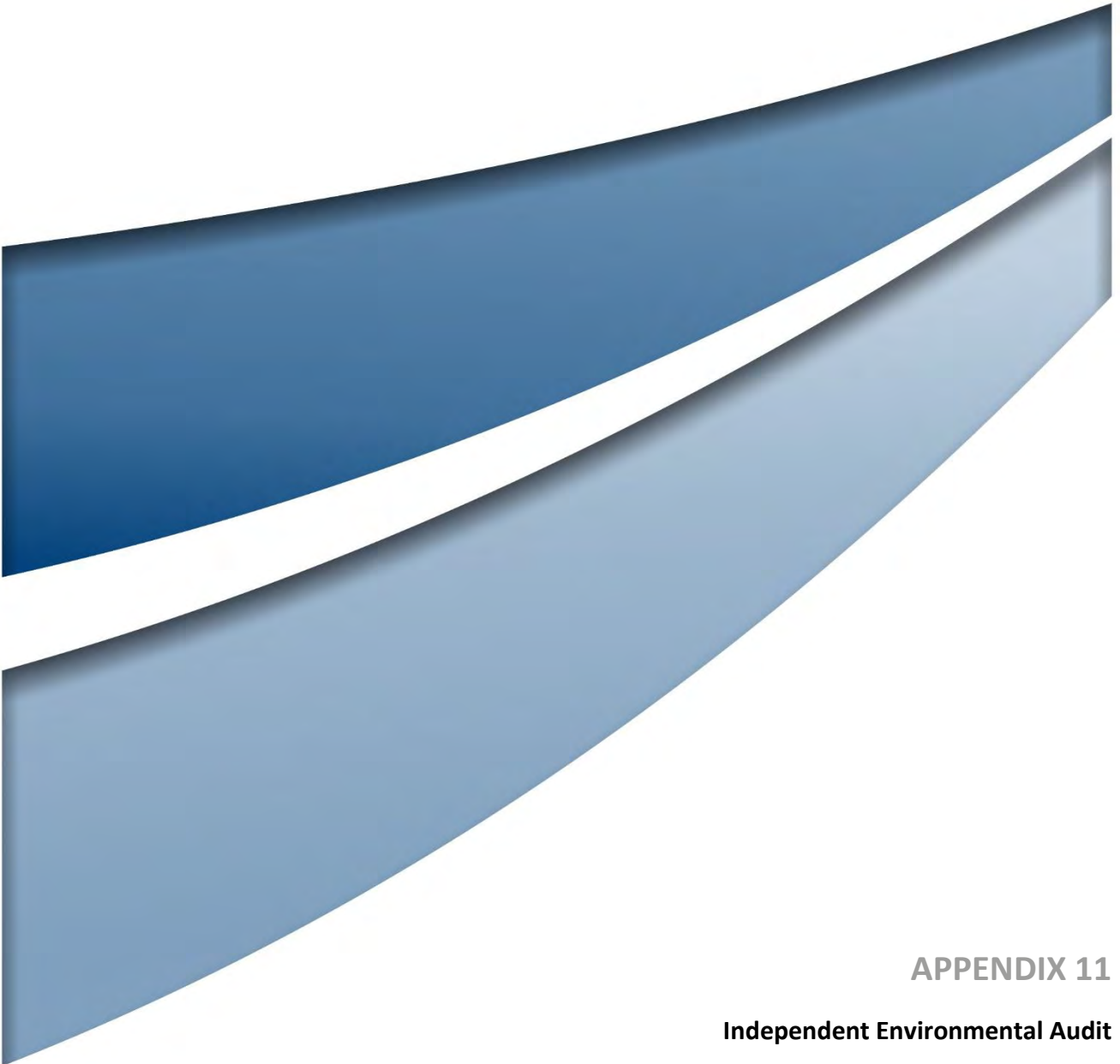
GENERAL BUSINESS: The 2020 Annual Review was tabled at the meeting. A copy is also available on the website.

NEXT MEETING: Proposed that the next meeting be held on Tuesday 30th November 2021 at 5pm.

CLOSE: There being no further business the meeting was closed at 1734.

Signed as a true and correct record

CHAIRPERSON



APPENDIX 11

Independent Environmental Audit

WALLERAWANG QUARRY

INDEPENDENT ENVIRONMENTAL
AUDIT

for Walker Quarries Pty Ltd

19 July 2021



DOCUMENT CONTROL

Document Status

Version	Description	Reviewed by	Approved by	Date issued
1	20/21 Annual Compliance Report	JB	DW	19/07/21

Document Details

Project Name	Wallerawang Quarry
Document Title	Independent Environmental Audit
Client	Walker Quarries Pty Ltd
Client Address	PO Box 320, Singleton NSW 2330
Author	Dorian Walsh
Author Address	6/127-129 John Street, Singleton NSW 2330
Our Reference	210719 Wallerawang Quarry IEA Report

LIMITATIONS OF REPORT

In preparing this Independent Environmental Audit on behalf of Walker Quarries Pty Ltd, James Bailey and Associates has assessed all activities appropriate and necessary to evaluate the environmental status of the site during the audit period. James Bailey and Associates has addressed all technical matters which might reasonably be considered to be relevant to such an audit conducted to standards which apply in New South Wales. Based on discussions with appropriate staff and a review of available documentation, it is James Bailey and Associates' opinion that the potential critical environmental issues associated with the site and operations are those discussed in this report. However, James Bailey and Associates can only advise on the basis of the information available to them and therefore cannot dismiss absolutely the possibility that parts of the site, or adjacent properties, may give rise to additional issues.

The conclusions presented in this report are professional opinions based solely upon James Bailey and Associates' interpretation of the documentation reviewed, interviews and conversations with personnel knowledgeable about the site and other available information, as referenced in this report. These conclusions are intended exclusively for the purposes stated herein, at the site listed, and for the project indicated.

This report does not, and does not purport to, give legal advice on the actual or potential environmental liabilities of any individual or organisation, or to draw conclusions as to whether any particular circumstances constitute a breach of relevant legislation.

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APPENDICES

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Appendix C	Plates from Site Inspection
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1. INTRODUCTION

1.1 BACKGROUND

James Bailey & Associates (JBA) has been commissioned by Walker Quarries Pty Ltd to conduct an Independent Environmental Performance Audit (IEA) for the Wallerawang Quarry (WQ). WQ operates under Development Approval (DA) 344-11-2001 (as modified) which was approved by the Department of Planning, Industry and Environment (DPIE) in 2004 and has subsequently been modified on three occasions.

Schedule 5, Condition 13 of DA 344-11-2001 specifies the requirement for the completion of an IEA for WQ every three years. **Appendix B** includes a list of all conditions of WQ approvals that have been assessed as part of this IEA, including DA 344-11-2001 and key mining authorities.

The period assessed for this IEA is from 13 April 2018 to 27 April 2021 (the audit period). This IEA was completed by JBA Exemplar Global International Certified Auditor, Dorian Walsh (No: 201881) and Tamie Gray (Assistant Auditor, JBA).

The audit consisted of a desktop review of documentation, interviews with WQ staff and contractors and a field inspection of the site in April 2021. The audit was conducted generally consistent with 'ISO 14010 - Guidelines and General Principles for Environmental Auditing', and 'ISO 14011 - Procedures for Environmental Auditing' and the 'Independent Audit Post Approval Requirements, May 2020' (Audit Guidelines) (DPIE, 2020).

Key documents reviewed during the IEA included:

- DA 344-11-2001 and Statement of Commitments (SOCs) (as modified);
- Lithgow City Council DA 019/18;
- WQ Mining Lease (ML) 1633 and Exploration Licence (EL) 4473; and
- WQ water licences and approvals; and
- WQ environmental management plans and procedures.

The IEA consisted of a detailed desktop review of approval documentation and contributions from key WQ staff and contractors. WQ representative Paul Hensley (PH) and Alex Irwin (AI), of Umwelt Environmental and Social Consultants, were the primary contacts during the IEA process. Trevor Hoffman (TH) of WQ was present during the audit site inspection on 27 April 2021.

1.2 REPORT STRUCTURE

Section 1 provides an introduction, describes the requirement for the IEA and provides a summary of the structure of this report;

Section 2 provides a description of WQ as relevant to this IEA;

Section 3 outlines the requirements for this IEA and where each has been addressed in this report;

Section 4 describes operational environmental performance during the audit period based on a review of documentation and key observations made during the audit site visit;

Section 5 of this report lists the non-compliances identified during the IEA; and

Section 6 provides a list of recommendations made from the audit.

2. SITE DESCRIPTION

WQ is located approximately 2.5km southeast of Wallerawang and 8 km northwest of Lithgow, on the southern side of the Great Western Highway. It is within the Lithgow Council Local Government Area (LGA) and is owned by Walker Quarries Pty Ltd, a subsidiary of Sitegoal Pty Ltd.

A resource of quartzite in excess of 18.5 Million Tonnes (Mt) was identified at Wallerawang Quarry. Wallerawang Quarry produces quartz from the hard rock quarry with a life expectancy exceeding 20 years. Extraction commenced in 2014 with annual production between 150,000 - 500,000 tonnes per annum (tpa), dependent on market demand.

DA 344-11-2001 has been modified on three occasions since it was initially determined, including:

- For consolidation of several constructed components of the Quarry and formalise the approval of production for additional quarry products(MOD 1). MOD1 was approved by DPIE on 25 August 2017;
- For an extension of WQ site operations (MOD2). MOD2 was approved by DPIE on 7 December 2018; and
- For further development of WQ extraction areas, increase in the area available for stockpiling to the south-west and south of the approved Western Stockpile Area and extension of the operational life of WQ to 15 July 2040 (MOD3). MOD3 was approved on 26 February 2020.

Figure 1 shows the layout of the WQ site as approved under Appendix 1 of DA 344-11-2001 (MOD3).

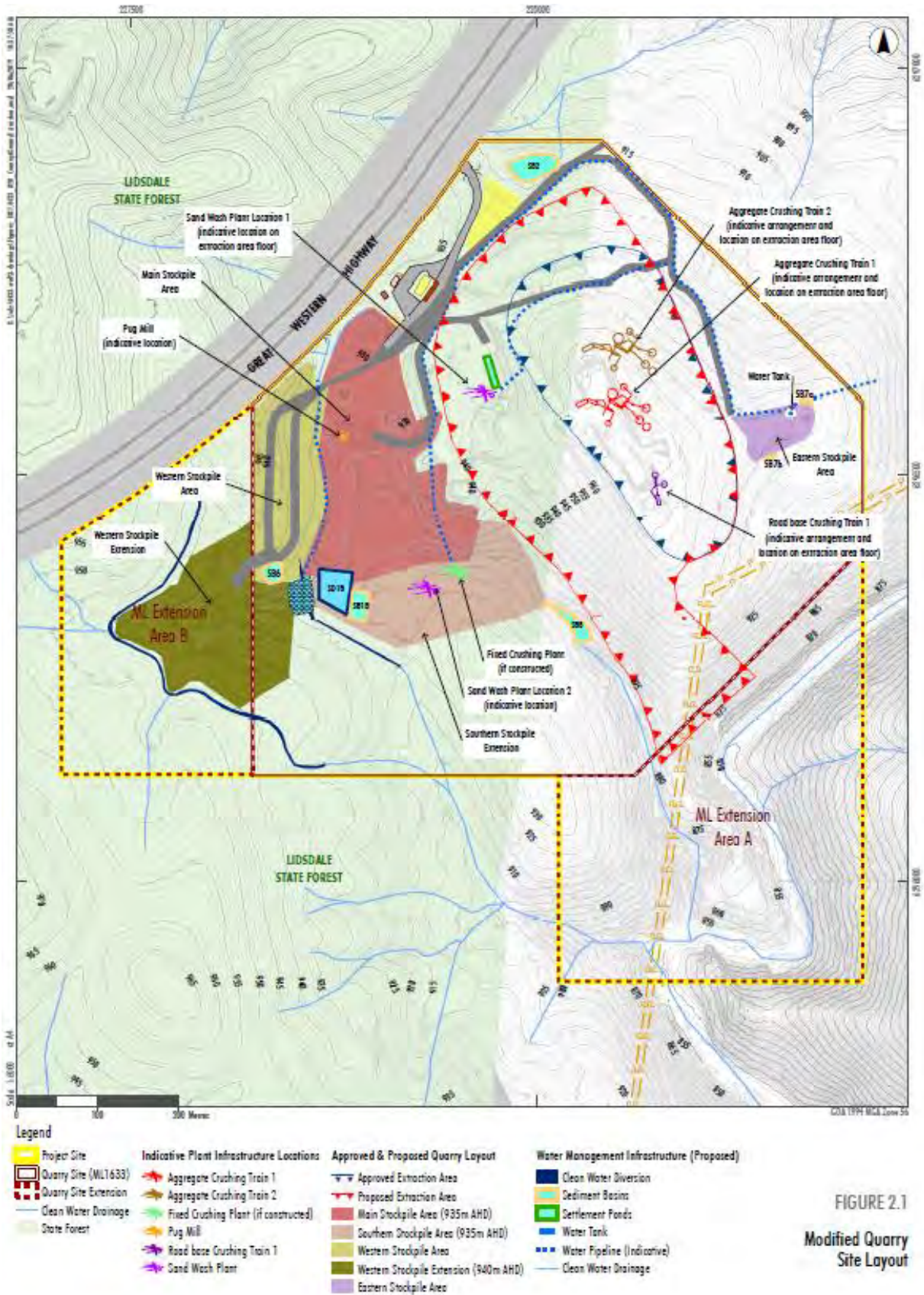


FIGURE 2.1
Modified Quarry Site Layout

Figure 1 Approved Site Layout Plan

3. AUDIT REQUIREMENTS

This section describes the WQ development approval requirement for an IEA and outlines the IEA guidelines that were used to inform the content and structure of this report. It also describes stakeholder consultation that was undertaken to highlight areas of focus for this IEA.

3.1 DEVELOPMENT APPROVAL

This IEA has been prepared pursuant to Schedule 5 Condition 13 of DA 344-11-2001. Each requirement under this condition is listed in **Table 1**, along with where each is addressed in this audit report.

Table 1 DA 344-11-2001 IEA Requirements and Where Addressed

Description	Where Addressed
Prior to the end of June 2021, and every three years after, unless the Secretary directs otherwise, the Applicant must commission and pay the full cost of an Independent Environmental Audit of the development. This audit must:	This Report
(a) be led by a suitably qualified, experienced and independent auditor whose appointment has been endorsed by the Secretary	Appendix A & Appendix D
(b) be conducted by a suitably qualified, experienced and independent team of experts (including any expert in field/s specified by the Secretary) whose appointment has been endorsed by the Secretary;	Appendix A & Appendix D
(c) be carried out in consultation with the relevant agencies and CCC;	Appendix D
(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);	Section 4
(e) review the adequacy of any approved strategy, plan or program required under the abovementioned approvals and this consent;	Section 5
(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	Section 6
(g) be conducted and reported to the satisfaction of the Secretary.	DPIE to determine

3.2 AUDIT GUIDELINES

This audit report has been prepared in accordance with the Audit Guidelines (DPIE, 2020). **Table 2** lists key requirements from the Audit Guidelines and indicates where each is addressed in this report.

Table 2 Audit Guideline Report Requirements and Where Addressed

Audit Guidelines Section	Description	Where Addressed
3.1.	Independent Audits must only be undertaken by a suitably qualified, experienced and independent auditor. Conditions of consent may require Independent Audits to be undertaken by an auditor and one or more technical specialists.	Appendix A & Appendix D

Audit Guidelines Section	Description	Where Addressed
3.2	<p>The auditor must consult with the Department, and other agencies and stakeholders, including the Community Consultative Committee (if one is required for the project), to obtain their input into the scope of the audit.</p> <p>Comments received during such consultation must be recorded and reported in the Independent Audit Report. Specific environmental issues raised during consultation must be investigated and findings of the investigation must be reported in the Independent Audit Report.</p>	Section 3.2 & Appendix D
3.3	<p>An independent audit must include: an assessment of compliance with:</p> <ul style="list-style-type: none"> a) conditions of consent applicable to the phase of the development that is being audited; b) all post approval documents prepared to satisfy the conditions of consent, including an assessment of the implementation of Environmental Management Plans and Sub-plans; c) all environmental licences and approvals applicable to the development excluding environmental protection licences issued under the <i>Protection of the Environment Operations Act 1997</i>; 	Section 1, Section 5 & Appendix B
3.3	<p>a review of the environmental performance of the development, including but not necessarily limited to, an assessment of:</p> <ul style="list-style-type: none"> a) actual impacts compared to predicted impacts documented in the environmental impact assessment; b) the physical extent of the development in comparison with the approved boundary; c) incidents, non-compliances and complaints that occurred or were made during the audit period; d) the performance of the development having regard to agency policy and any particular environmental issues identified through consultation carried out when developing the scope of the audit; e) feedback received from the Department, and other agencies and stakeholders, including the community or Community Consultative Committee, on the environmental performance of the project during the audit period; 	Section 4, Section 5 & Appendix D
3.3	the status of implementation of previous Independent Audit findings, recommendations and actions (if any);	Appendix B
3.3	a high-level assessment of whether Environmental Management Plans and Sub-plans are adequate; and	Section 4 & Appendix B
3.3	a high-level assessment of whether Environmental Management Plans and Sub-plans are adequate; and	Section 4, Section 5, Section 6 & Appendix B
3.3	any other matters considered relevant by the auditor or the Department, taking into account relevant regulatory requirements and legislation, knowledge of the development's past performance and comparison to industry best practices.	Section 5, Section 6 & Appendix B
3.4	Audits must commence with an opening meeting and conclude with a closing meeting. The meetings must be attended by a representative of the proponent at manager level or above, the auditor and technical specialists (if any).	Section 1 & Appendix B
3.5	Independent Audits must include interviews with key personnel involved in project delivery, including those with responsibility for environmental management, to assist with verifying the compliance status of the development.	Section 1 & Appendix B

Audit Guidelines Section	Description	Where Addressed
	However, note that interviews are generally not sufficient evidence to verify compliance with a condition of consent and additional supporting evidence should be provided.	
3.6	Independent Audits must include a physical site inspection. The site inspection must cover all development areas and environmental aspects that form part of the scope of the audit.	Section 1, Section 4 & Appendix C

3.2.1 Stakeholder Engagement

During the preparation for this IEA, input was sought from the following WQ stakeholders to confirm any areas of site operations or environmental compliance that should be of particular focus:

- DPIE;
- DPIE Water;
- NSW Environment Protection Authority (EPA);
- Lithgow City Council (LCC); and
- WQ Community Consultative Committee (CCC) Chair.

Where specific issues were raised during consultation these are listed in **Table 3**, along with the section where each is addressed in this IEA report. Stakeholder correspondence received is included as **Appendix D**.

Table 3 Stakeholder Requirements and Where Addressed

Ref	Key Requirement	Where Addressed
Department of Planning, Industry and Environment		
1.	Assess the performance of compliance against the implementation of the mitigation measures documented in approved Noise Management Plan	Appendix B: Table A, Schedule 3, Condition 5
2.	Assess the performance of compliance against the implementation of the mitigation measures documented in approved Air Quality Management Plan	Appendix B: Table A, Schedule 3, Condition 14

4. ENVIRONMENTAL PERFORMANCE

*This section discusses the key compliance and environmental performance issues identified during the audit site inspection. Photographs from the site inspection which are referred to in the following sections of this report are included in **Appendix C**.*

4.1 APPROVALS AND COMPLIANCE

The review of WQ compliance with the conditions of DA 344-11-2001, ML 1633 and EL 4473 was a key focus of this IEA. The review of WQ documentation and the April 2021 site inspection found that WQ are generally operating in compliance with their regulatory approvals and associated environmental management documents (see **Section 5** and **Appendix C**).

The management strategies, plans and other documents required for WQ to manage the environmental impacts from site operations were found to be being implemented to minimise the key risks on site. As such, the non-compliances and recommendations identified in this report (see **Section 5** and **Section 6**) are generally administrative in nature, and relate to the need for further documentation of the operational and reporting actions undertaken by WQ. This includes the requirement to document the implementation of noise and air quality control measures, in accordance with the measures identified in the respective management plans required under DA 344-11-2001.

4.2 QUARRY OPERATIONS

The inspection of the WQ site on 27 April 2021 found that the operational areas of the site were well maintained, and generally in accordance with the site layout approved under DA 344-11-2001 (see **Figure 1**).

Site plant and equipment observed during the inspection were found to be generally operating in a manner that minimised potential impacts to the environment. Environmental controls to minimise dust emissions from extraction, stockpiling and processing areas on site were found to be being implemented, with a watercart in operation and dust controls also being applied to trucks leaving site via the wheel wash. While still operating in areas at a relatively high elevation compared to community receptor locations, no significant WQ noise sources or visible dust emissions were noted during a review of the site from surrounding areas. The low number of amenity complaints from the community received during the audit period (including those related to visual impacts) would also indicate that operational impacts are generally undertaken in accordance with WQ approvals and associated management plans.

Water management infrastructure, including sediment dams, drains and the settling cells below the Wash Plant circuit were also observed to be well maintained, with pumping infrastructure in place to managed stored water levels.

Rehabilitation completed by WQ to the time of audit was found to be generally progressing towards the nominated 'completion' targets, with woodland communities beginning to develop in more established sections of the WSEA (see **Figure 1**). Maintenance plantings and weed controls are recommended to ensure that the performance of WQ rehabilitation areas continues to be supported.

A review of site laydown areas found that general waste management and housekeeping measures are being implemented, however it is recommended the WQ review the controls and procedures in place for the storage and use of hydrocarbons and oils retained on site (outside of the main diesel storage tank). While spill response kits were located in key storage locations on site, it is noted that smaller volume hydrocarbon containers should be stored in a bunded area with appropriately sized sump when not being actively used in maintenance tasks.

4.3 ENVIRONMENTAL INCIDENTS AND COMPLAINTS

The review of site documentation and discussions with WQ staff found that environmental non-conformances during the audit period (primarily administrative in nature) had generally been identified and reported to the relevant agencies during the audit period. Interviews with WQ personnel confirmed that no material environmental incidents had occurred during the audit period.

Additionally, the small number of complaints received during the audit period (a maximum of one in each of the 2019 and 2020 calendar years, with none in 2018) indicates that WQ are generally managing site activities to ensure that impacts to local community receivers are minimised.

5. NON-COMPLIANCES AGAINST APPROVALS AND LICENCES

This section provides a discussion on the identified non-compliances against DA 344-11-2001 and other licences reviewed at the time of the IEA.

A summary of non-compliances identified during this IEA are provided in **Table 4**. Recommendations arising from these non-compliances are included in **Section 6**.

Table A and Table B of **Appendix B** provides a complete tabulated list of conditions of DA 344-11-2001 and other licences, respectively, with the compliance status and more detailed comments noted against each.

There were no recorded non-compliances against WQ mining authorities or Water Access Licences reviewed during this IEA (see Table B of **Appendix B**).

Table 4 Identified Non-Compliances

Ref	Non-Compliance
DA 344-11-2001	
Schedule 2, Condition 2(a)	Some non-conformances against the conditions of DA 344-11-2001 were noted during the audit period. These non-conformances are summarised below in this table, with further detail provided in Appendix B .
Schedule 3, Condition 3B	WQ were not able to verify that DPIE have been advised that a noise agreement is in place with the owner of property 'N2'.
Schedule 3, Condition 4 (c)	The Noise Management Plan (NMP) allows for bi-annual noise monitoring. A period greater than six months had elapsed between the noise monitoring events in August 2018 and April 2019. This was reported as a non-compliance in the 2018-19 AR.
Schedule 3, Conditions 11, 13	Four depositional dust samples were not collected within 30+/-2 days required under the relevant administrative standard. November and December 2019 and February and March 2020 samples were collected after 33, 35, 27 and 33 days, respectively.
Schedule 3, Condition 23C(a)	DPIE endorsement of OzArk as a suitable party to prepare the AHCMP could not be verified at the time of audit, however it is noted that the ACHMP was approved by DPIE.
Schedule 3, Condition 25	Suitable long-term securities for WQ offsets were not confirmed and approved by DPIE prior to 31/12/18, as required under DA 344-11-2001.
Schedule 3, Condition 31 (c)	The submission date of the Mining Operations Plan for the period July 2020 to July 2025 to DPIE-RR was 29/05/20, which was outside of the three-month period from the approval of MOD3.
Schedule 3, Condition 37	Waste oil drums and other containers were found to be stored outside of bunded pallets during the audit site inspection.
Schedule 5, Condition 5 (b) and (c)	Evidence was not available to verify WQ review of plans strategies and programs following submission of relevant Annual Review (AR) documents and the 2018 IEA report.
Schedule 5, Condition 8	The 2018-2019 WQ AR noted a non-compliance as at the time of publishing the AR; the meeting minutes from 5 June 2019 CCC meeting was not publicly available on the WQ website.
Schedule 5, Condition 12	Evidence was not available to confirm that copies of the 2018-19 and 2019-20 AR documents were provided to LCC.
Schedule 5, Condition 17	Environmental Assessment documentation listed in Schedule 2, Condition 2(c) of DA 344-11-2001 was not available on the WQ website.

6. AUDIT RECOMMENDATIONS

This section provides a summary of IEA recommendations arising from identified non-compliances, as well as opportunities for continual improvement.

A consolidated list of recommendations is provided in **Table 5**. This includes those arising from both the non-compliances listed in **Section 5** and from opportunities for review and improvement identified during this IEA.

Table 5 IEA Recommendations

Ref	Recommendation Description
Non-Compliance Recommendations	
DA 344-11-2001	
Schedule 3, Condition 2	It is recommended that the times of all blast events are included in future Blast Monitoring Reports and AR documents published on the WQ website, to confirm compliance with approved WQ blasting hours.
Schedule 3, Condition 3B	It is recommended that WQ formally notify DPIE that a noise agreement is in place with the owner of property ID 'N2'.
Schedule 3, Condition 4 (c)	Undertake noise monitoring bi-annually in accordance with the approved Noise Management Plan.
Schedule 3, Conditions 11, 13	Ensure that dust sampling is undertaken within 30+/-2 days required under the relevant standard.
Schedule 3, Condition 23C	It is recommended that WQ seek formal DPIE endorsement of OzArk (or other suitably qualified person(s)) at the next revision of the ACHMP.
Schedule 3, Condition 25	It is recommended that WQ seek DPIE approval of the long-term offset security payments made to the Biodiversity Conservation Fund in 2018.
Schedule 3, Condition 37	Put additional containment / storage measures in place to ensure that containers holding hydrocarbons and oils are appropriately stored when not in active use, in accordance with AS1940.
Schedule 5, Condition 5 (b) and (c)	WQ consider adding a column providing the purpose of review/update to management plan document control tables to address this condition. It is also recommended that notification is provided to the DPIE on submission of each AR that confirms any management plans scheduled to be revised by WQ.
Schedule 5, Condition 8	Upload CCC meeting minutes to the Company website following their distribution to CCC representatives.
Schedule 5, Condition 12	Ensure that copies of WQ AR documents continue to be provided to LCC.
Schedule 5, Condition 17	Update the link to the current DPIE major projects database from the WQ website for access to DA 344-11-2001 approvals documentation.
Continual Improvement Recommendations	
DA 344-11-2001	
Schedule 3, Condition 1	Include the timing of all blast events in future Blast Monitoring Reports and AR documents published on the WQ website, to confirm compliance with approved blasting hours.
Schedule 3, Condition 4 (a)	Include comment on the annual operational noise Best Practice Measure review undertaken by WQ in future ARs.

Ref	Recommendation Description
Schedule 3, Condition 4 (b)	Consider adding a section to the 'Daily Inspection Logs' to allow for comments on metrological conditions and/or any corrective actions taken to minimise noise emissions from site to be noted by the Quarry Manager.
Schedule 3, Condition 4 (b)	Recommend that WQ consider making real-time meteorological data available to the Quarry Manager, to assist in reviewing noise-enhancing weather conditions.
Schedule 3, Condition 4 (b)	It is recommended that WQ include comment on the annual BPM review of noise impacts in future ARs.
Schedule 3, Condition 5	Include the approval letter from DPIE as an Appendix to the NMP.
Schedule 3, Condition 5 (c)	It is recommended that WQ include comment on the annual BPM review of noise impacts in future ARs.
Schedule 3, Condition 5 (e)	Recommend that the NMP is updated to modify the siting of attended monitoring location N2, or to add a fourth monitoring location representative of the closest privately-owned residence.
Schedule 3, Condition 9 (a)	Include comments on fume management in future blast monitoring reports.
Schedule 3, Condition 10	Include the approval letter from DPIE as an Appendix to the Blast Management Plan.
Schedule 3, Condition 13 (a)	Consider adding a section to the 'Daily Inspection Logs' to allow for comments on metrological conditions and/or any corrective actions taken to minimise noise emissions from site to be noted by the Quarry Manager.
Schedule 3, Condition 13 (b)	Consider making real-time meteorological data available to the Quarry Manager to assist in reviewing noise-enhancing weather conditions.
Schedule 3, Condition 14	Include the approval letter from DPIE as an Appendix to the Air Quality Management Plan.
Schedule 3, Condition 18	Include the approval letter from DPIE as an Appendix to the Soil and Water Management Plan (SWMP).
Schedule 3, Condition 23c	Include the approval letter from DPIE as an Appendix to the Aboriginal and Cultural Heritage Management Plan.
Schedule 3, Condition 25	WQ should seek DPIE approval for the long-term security arrangements confirmed for the BOS in May 2020.
Schedule 3, Condition 26	Include the approval letter from DPIE as an Appendix to the Biodiversity Management Plan. WQ should record and maintain mapping of areas treated for weeds in each year, to allow for the regular review of weed treatment methods and performance.
Schedule 3, Condition 30	Review the performance of cover on relatively small bare areas of topsoil stockpiles and rehabilitation areas identified. Re-establishment of grass cover and/or infill plantings should be considered in these areas.
Schedule 3, Condition 33	Investigate options to complete infill plantings or establish a cover crop on exposed sections of the visual bund.
Schedule 5, Condition 1	Include the approval letter from DPIE as an Appendix to the Environmental Management Strategy.
EL 4473	
Schedule 2, Condition 3	It is recommended that WQ consider the <i>Exploration Code of Practice: Community Consultation</i> in during consultation required for future activities under EL 4473.

For


JAMES BAILEY & ASSOCIATES

A handwritten signature in black ink, appearing to read "Dorian Walsh".

Dorian Walsh

Senior Environmental Scientist

APPENDIX A
DPIE INDEPENDENT AUDIT
REPORT DECLARATION

Independent Environmental Audit Report Declaration	
Project Name:	Wallerawang Quarry
Consent No.:	DA 344-11-2001 (as modified)
Description of Project:	Wallerawang Quarry (hard rock production)
Project Address:	Lot 6, Great Western Highway, Wallerawang, NSW, 2845
Proponent	Walker Quarries Pty Ltd
Proponent Address:	Lot 6, Great Western Highway, Wallerawang, NSW, 2845
Title of Audit:	Wallerawang Quarry Independent Environmental Audit
Date:	16/07/21
Declaration	<p>I declare that I have undertaken the Independent Audit and prepared the contents of the attached Independent Audit Report and to the best of my knowledge:</p> <ul style="list-style-type: none"> i. the audit has been undertaken in accordance with relevant condition(s) of consent and the <i>Independent Audit Compliance Requirements</i> (Department 2020); ii. the findings of the audit are reported truthfully, accurately and completely; iii. I have exercised due diligence and professional judgement in conducting the audit; iv. I have acted professionally, objectively and in an unbiased manner; v. I am not related to any proponent, owner or operator of the project neither as an employer, business partner, employee, or by sharing a common employer, having a contractual arrangement outside the audit, or by relationship as spouse, partner, sibling, parent, or child; vi. I do not have any pecuniary interest in the audited project, including where there is a reasonable likelihood or expectation of financial gain or loss to me or spouse, partner, sibling, parent, or child; vii. neither I nor my employer have provided consultancy services for the audited project that were subject to this audit except as otherwise declared to the Department prior to the audit; and viii. I have not accepted, nor intend to accept any inducement, commission, gift or any other benefit (apart from payment for auditing services) from any proponent, owner or operator of the project, their employees or any interested party. I have not knowingly allowed, nor intend to allow my colleagues to do so. <p>Notes:</p> <ul style="list-style-type: none"> a) Under section 10.6 of the <i>Environmental Planning and Assessment Act 1979</i> a person must not include false or misleading information (or provide information for inclusion in) in a report of monitoring data or an audit report produced to the Minister in connection with an audit if the person knows that the information is false or misleading in a material respect. The proponent of an approved project must not fail to include information in (or provide information for inclusion in) a report of monitoring data or an audit report produced to the Minister in connection with an audit if the person knows that the information is materially relevant to the monitoring or audit. The maximum penalty is, in the case of a corporation, \$1 million and for an individual, \$250,000; and b) The <i>Crimes Act 1900</i> contains other offences relating to false and misleading information: section 307B (giving false or misleading information – maximum penalty 2 years imprisonment or 200 penalty units, or both).
Name of Auditor:	Dorian Walsh
Signature:	
Auditor Qualification	Auditor for Environmental Management, EMS and Compliance Audits. Exemplar Global No. 201881
Company:	James Bailey & Associates
Company Address:	6/127-129 John Street, Singleton NSW 2330

APPENDIX B
APPROVAL AND LICENCE
COMPLIANCE TABLES

Table A
Development Approval 344-11-2001 Conditions

Schedules 2-5 updated in entirety during MOD1 25 August 2017.

Red type represents 7 December 2018 modification (MOD2).

Aqua type represents 26 February 2020 modification (MOD3)

Cond	DA 344-11-2001 Condition	Status	Evidence
SCHEDULE 2 ADMINISTRATIVE CONDITIONS			
Obligation to Minimise Harm to the Environment			
1.	In addition to meeting the specific performance criteria established under this approval, the Proponent must implement all reasonable and feasible measures to prevent and/or minimise any material harm to the environment that may result from the construction, operation, or rehabilitation of the project.	Compliant	No incidents or non-compliances identified during the audit period resulted in material harm to the environment.
Terms of Consent			
2.	The development may only be carried out: (a) in compliance with the conditions of this consent; (b) in accordance with all written directions of the Secretary; (c) generally in accordance with the EIS, EA (Mod 1), SEE (Mod 2) and SEE (Mod 3); and (d) generally in accordance with the Development Layout in Appendix 1.	Not compliant	(a) Non-conformances against the conditions of this consent were noted. These are identified against the relevant conditions below. (b - d) The development was observed to be carried out generally in accordance with WQ approvals and layout plan.
3.	If there is any inconsistency between the documents in condition 2 (c), the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this approval shall prevail to the extent of any inconsistency.	Not triggered	None noted during the audit period (AI pers comm).
4.	The Applicant must comply with any written requirement/s of the Secretary arising from the Department's assessment of: (a) any strategies, plans, programs, reviews, audits, reports or correspondence that are submitted in accordance with this consent (including any stages of these documents); (b) any reviews, reports or audits undertaken or commissioned by the Department regarding compliance with this consent; and (c) the implementation of any actions or measures contained in these documents.	Not triggered	No further correspondence was received additional to that described below in this table for DA 344-11-2001 plans, strategies and other compliance documents (AI per comms).
Limits on Consent			
5.	The Applicant may carry out quarrying operations on the site until 15 July 2040. Note: <ul style="list-style-type: none"> Under this consent, the Applicant is required to rehabilitate the site and carry out additional requirements and undertakings to the satisfaction of the Secretary. Consequently, this consent will continue to apply in all respects other than the right to conduct quarrying operations until the rehabilitation of the site and those requirements and undertakings have been carried out to the standard required by the applicable conditions. 	Not triggered	Quarrying operations can continue until 2040.
Extraction Depth			
6	The Applicant must not conduct quarrying operations within one metre of the maximum groundwater level, with the exception of areas where the Applicant has received the written approval of the Secretary for the construction and use of drainage sumps, groundwater monitoring bores, exploration boreholes or other similar activity agreed to by the Secretary.	Compliant	As per the MOD 3 DPIE Assessment Report, the water table at the site ranges between 870 and 900 m Australian Height Datum (AHD). Section 5.2 of the Soil and Water Management Plan (SWMP) provides results from previous studies: <ul style="list-style-type: none"> MOD 1 (2017) reviewed records of registered groundwater bores within 3 km of the Quarry and established groundwater levels below 910 AHD No interceptions of significant groundwater during exploration drilling completed to depths of 890m AHD Investigations undertaken to support the extension to the Quarry by Jacobs identify the

Cond	DA 344-11-2001 Condition	Status	Evidence
			<p>groundwater table at an elevation of no higher than 890m AHD.</p> <p>Viewed correspondence from AI to DPIE-Natural Resources Access Regulator (NRAR) dated 26/04/21 regarding a revision to the SWMP document (see Schedule 3, Condition 18). The letter notes that:</p> <ul style="list-style-type: none"> - The methodology for determination of the maximum groundwater level will be confirmed in consultation with DPIE-NRAR; and - WQ will not undertake extraction below 901m AHD without NRAR-Water endorsement of the established maximum groundwater level. <p>AI (pers comm) confirmed that quarry extraction remains above 901m AHD at the time of audit. Viewed 'Briefing Note' from Umwelt to WQ documenting water levels in the three groundwater monitoring bores surrounding the site, dated 22/04/21.</p>
6A	<p>Prior to the commencement of quarrying operations below 901 mAHD (except for activities approved under condition 6 of this Schedule), the Applicant must:</p> <p>(a) determine the maximum groundwater level within and adjacent to the proposed extraction area, in consultation with DPIE - Water, using all available groundwater and rainfall monitoring data collected from the site or in the vicinity of the site and appropriate modelling software and parameters;</p> <p>(b) establish the proposed maximum extraction depth to comply with condition 6; and</p> <p>(c) prepare a contour map or similar, showing the proposed maximum extraction depth; for the approval of the Secretary.</p>	Not triggered	See Schedule 2, Condition 6 above.
Limits on Extraction and Transport			
7.	The Applicant must not extract and/or transport more than 500,000 tonnes of quarry products from the site in any calendar year.	Compliant	<p>Viewed WQ Annual Review (AR) documents prepared during the reporting period, which confirm extraction and transport of product from site were within approved limits:</p> <ul style="list-style-type: none"> - 2018 AR: 173,910 t was transported from site; - 2019 AR: 122,936 t was transported from site; - 2020 AR: 208,032 t transported from site; and <p>Viewed WQ 'Sales Summary 2020-21' sheet, which shows a total of 131,580 t transported from site as at the end of April 2021.</p>
Structural Adequacy			
8.	<p>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.</p> <p>Notes:</p> <ul style="list-style-type: none"> • Under Part 6 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 the development. 	Compliant	<p>Viewed final Occupation Certificate 180143/01 dated 28/02/18 and associated inspection reports prepared by BBAC Certifiers. Occupation references Lithgow City Council (LCC) DA 019/18 for 'New de-mountable office with training room.'</p> <p>PH (pers comm) confirmed no other new buildings or alterations were constructed during the audit period.</p>
Demolition			
9.	The Applicant must ensure that all demolition work is carried out in accordance with <i>Australian Standard AS 2601-2001: The Demolition of Structures</i> , or its latest version.	Not triggered	AI (per comm) confirmed that no demolition works have occurred during the audit period.
Protection of Public Infrastructure			
10.	<p>Unless the Applicant and the applicable authority agree otherwise the Applicant must:</p> <p>(a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the development; and</p> <p>(b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the development.</p>	Not triggered	<p>Viewed WQ AR documents prepared during the reporting period, which confirm:</p> <ul style="list-style-type: none"> - 2018 AR: No damage to public infrastructure reported; - 2019 AR: No damage to public infrastructure reported; and - 2020 AR: No damage to public infrastructure reported. <p>PH (pers comms) stated that no damage to public infrastructure had been reported to WQ since lodgement</p>

Cond	DA 344-11-2001 Condition	Status	Evidence
	Note: This condition does not apply to damage to roads caused as a result of general road usage.		of the 2020 AR.
Operation of Plant and Equipment			
11.	The Applicant must ensure that all the plant and equipment used at the site, or to monitor the performance of the development is: (a) maintained in a proper and efficient condition; and (b) operated in a proper and efficient manner.	Compliant	a) Audit site inspection indicated that plant and equipment on site was generally well maintained (see Plate 1 to Plate 3). Viewed six-monthly Noise Monitoring Assessment Reports during the audit period, including those appended to the 2019 and 2020 AR documents as prepared by MAC. The MAC monitoring reports confirm that site plant and equipment was generally compliant with sound power levels adopted for the EIS. Appendix 7 of the 2018/19 and 2019/20 ARs state the plant and equipment are serviced every 250 hours. Viewed examples of WQ maintenance records ('WQ Repair Order / Job Card') retained for each item of plant and equipment on site. b) Audit site inspection found that plant and equipment on site was generally being operated in a proper and efficient manner to reduce dust and noise emissions. Viewed examples of completed WQ 'Site WHS Induction Forms' and 'Site Induction Program', which include requirements for the safe and efficient operation of plant and equipment by certified operators. Also sighted completed 'Walker Quarries Mobile Plant Prestart and Operational Safety Check.'
Production Data			
12.	The Applicant must: (a) from the commencement of quarrying operations provide calendar year annual quarry production data to RR using the standard form for that purpose; and (b) include a copy of this data in the Annual Review.	Compliant	a) Sighted S1 Form for year ending 30/06/18 dated 23/08/18 (provided by PH), S1 Form dated 26/09/19 for year ending 30/06/19 (Appendix 2 2018-19 AR) and Form S1 dated 17/09/20 for year ending 30/6/20. (Appendix 2 2019-20 AR). b) Section 4.2 of the 2019-20 AR, 2018-19 AR contains annual production data for the audit period.
Compliance			
13.	The Applicant must ensure that all employees, contractors and sub contractors are aware of, are instructed to and comply with, the conditions of this consent relevant to their respective activities.	Compliant	Viewed examples of completed WQ 'Site WHS Induction Forms' and 'Site Induction Program'. Documents include content on general environmental and safety management obligations for site personnel from the consent. PH (pers comm) confirm that inductions are required for all WQ employees and contractors.
Contributions to Council			
14.	Within 6 months of the date of approval of Modification 3, the Applicant must make contributions to Council for the provision of public facilities and to enhance amenity and services within the Lithgow LGA, in accordance with the Section 94A Development Contributions Plan for Lithgow City Council October 2015 , or its most recent version. Note: See also section 7.11 of the EP&A Act.	Compliant	MOD 3 was approved 26 February 2020, so payment was required by 26/08/20. An enquiry to LCC regarding the issue of an invoice for this payment was made by WQ on 29 June 2020 (Appendix 7 of the 2019-20 AR). Viewed LCC invoice for 'Section 94A Development Contribution – DA344-11-2004 Modification 3 – Walker Quarries' dated 15/07/20 and Remittance Advice from WQ for the required amount, dated 03/08/20.
Applicability to Guidelines			
15.	References in the conditions of this consent to any guideline, protocol, Australia Standard or policy are to such guidelines, protocols, Standards or policies in the form they are in as the date of inclusion (or later update) in the condition.	-	Noted.
16.	However, consistent with the conditions of this consent and without altering any limits or criteria in this consent, the Secretary may, in respect of ongoing monitoring and management obligations, agree to or require compliance with an updated or revised version of such a guideline, protocol, Standard or policy, or a replacement of them.	Not triggered	Noted
Crown Land			
17.	The Applicant must consult with DPIE - Crown Lands prior to undertaking any development on Crown land or Crown roads.	Compliant	The Quarry is located over 3 parcels of land: - Lot 6 DP872230 owned by the Quarry; - Lot 7322 DP1149335 owned by Crown land; and

Cond	DA 344-11-2001 Condition	Status	Evidence										
	<p>Notes:</p> <p>(a) Under Section 265 of the Mining Act 1992, the Applicant is required to enter into a compensation agreement with DPIE - Crown Lands prior to undertaking any mining operations or related activities on Crown land or Crown roads within a mining lease.</p> <p>(b) Under Section 141 of the Mining Act 1992, the Applicant is required to enter into an access arrangement with DPIE - Crown Lands prior to undertaking any prospecting operations on Crown land or Crown roads within an exploration licence.</p>		<p>- Lot 7071 DP1201227 owned by Crown land.</p> <p>Viewed letter from DPIE-Crown Lands Business Centre dated 23/08/19 and 'Crown Land Management Act Section 2.18 Licence (Licence Number RN 598097)' dated 27/09/29, for Lot 7322 DP 1149335.</p> <p>Viewed 'Compensation Agreement' between Forestry Corporation of NSW and WQ for access and mining within the Lidsdale State Forest, dated 03/07/18.</p>										
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS													
NOISE													
Hours of Operation													
1.	<p>The Applicant must comply with the operating hours set out in Table 1.</p> <table border="1"> <caption>Table 1: Operating Hours</caption> <thead> <tr> <th>Activity</th> <th>Permissible Hours</th> </tr> </thead> <tbody> <tr> <td>Quarrying operations</td> <td> <ul style="list-style-type: none"> 7 am to 6 pm Monday to Friday 8 am to 1 pm Saturday At no time on Sundays or public holidays </td> </tr> <tr> <td>Loading and dispatch of trucks</td> <td> <ul style="list-style-type: none"> May be conducted at any time, provided these activities comply with the noise criteria in Table 2 </td> </tr> <tr> <td>Blasting</td> <td> <ul style="list-style-type: none"> 9 am to 5 pm Monday to Friday 9 am to 1 pm on Saturdays At no time on Sundays or public holidays </td> </tr> <tr> <td>Maintenance</td> <td> <ul style="list-style-type: none"> May be conducted at any time, provided that these activities are not audible at any privately-owned residence </td> </tr> </tbody> </table>	Activity	Permissible Hours	Quarrying operations	<ul style="list-style-type: none"> 7 am to 6 pm Monday to Friday 8 am to 1 pm Saturday At no time on Sundays or public holidays 	Loading and dispatch of trucks	<ul style="list-style-type: none"> May be conducted at any time, provided these activities comply with the noise criteria in Table 2 	Blasting	<ul style="list-style-type: none"> 9 am to 5 pm Monday to Friday 9 am to 1 pm on Saturdays At no time on Sundays or public holidays 	Maintenance	<ul style="list-style-type: none"> May be conducted at any time, provided that these activities are not audible at any privately-owned residence 	Compliant	<p>Viewed examples of WQ employee timesheets completed during the audit period. PH (pers comm) confirmed that staff can be on site prior to or after approved hours, however no 'quarrying operations' are undertaken outside of approved times.</p> <p>Viewed examples of blasting contractor (Premier Drill & Blast) reports for blast events, which include times of each blasting event. It is recommended that the times of all blast events are included in future Blast Monitoring Reports and AR documents published on the WQ website.</p>
Activity	Permissible Hours												
Quarrying operations	<ul style="list-style-type: none"> 7 am to 6 pm Monday to Friday 8 am to 1 pm Saturday At no time on Sundays or public holidays 												
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2.	<p>The following activities may be carried out outside the hours specified in condition 1 above:</p> <p>(a) delivery or dispatch of materials as requested by Police or other public authorities; and</p> <p>(b) emergency work to avoid the loss of lives, property or to prevent environmental harm.</p> <p>In such circumstances, the Applicant must notify the Secretary and affected residents prior to undertaking the activities, or as soon as is practical thereafter.</p>	Compliant	<p>(a) No delivery or dispatch of materials as requested by Police or other public authorities (AI per comms).</p> <p>(b) No emergency work to avoid the loss of lives, property or to prevent environmental harm (AI per comms).</p>										
Operational Noise Criteria													
3.	<p>The Applicant must ensure that the noise generated by the development does not exceed the criteria in</p> <table border="1"> <caption>Table 2: Operational noise criteria dB(A)</caption> <thead> <tr> <th>Noise Assessment Location</th> <th>Day 1 hour/20min</th> <th>Evening 1 hour/20min</th> <th>Night 1 hour/20min</th> </tr> </thead> <tbody> <tr> <td>All privately-owned residences</td> <td>43</td> <td>39</td> <td>35</td> </tr> </tbody> </table>	Noise Assessment Location	Day 1 hour/20min	Evening 1 hour/20min	Night 1 hour/20min	All privately-owned residences	43	39	35	Compliant	<p>Noise monitoring is completed at least every six months at 3 sites (N1: Gemalong property N2: Cockatoo Pines property and N3: Cypress Place) Another monitor is located opposite the Quarry office RL1 (see Schedule 3, Condition 5).</p> <p>Attended monitoring was completed by Muller Acoustics Consulting Pty Ltd (MAC) throughout the audit period. No exceedances of operational noise criteria were identified during the April and August 2018, April and September 2019 and March and September 2020. The MAC monitoring report for March 2021 notes that WQ noise exceeded criteria at property N2 (a privately-owned property and not a residential location); however it was noted by MAC that the property owner has an agreement with WQ and as such, the noise criteria under this condition do not apply (see Schedule 3, Condition 3B).</p>		
Noise Assessment Location	Day 1 hour/20min	Evening 1 hour/20min	Night 1 hour/20min										
All privately-owned residences	43	39	35										
3A.	<p>Noise generated by the development must be monitored and measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the <i>NSW Noise Policy for Industry</i> (EPA, 2017).</p>	Compliant	<p>Condition 3A was in place from 26/02/20.</p> <p>Noise monitoring reports completed by MAC in 2020 (March and September) and 2021 (March) include a statement that compliance monitoring is completed in accordance the NSW INP.</p>										
3B.	<p>The noise criteria in Table 2 do not apply if the Applicant has an agreement with the owner/s of the relevant residence or land to exceed the noise criteria, and the Applicant has advised the Department in writing of the terms of this agreement.</p>	Not compliant	<p>Following the audit site inspection, a letter to WQ dated 08/07/21 from the owner of property 'N2' was provided, which confirmed that the landholder has a noise agreement with WQ, is accepting of noise levels at the property and aware that these may exceed operational noise criteria in the WQ development consent. The letter confirms that there is not a residence on property 'N2'. WQ were not able to verify that DPIE have been advised that a noise agreement is in place with the owner of property 'N2'. It is recommended that WQ formally notify DPIE that this agreement is in place.</p>										

Cond	DA 344-11-2001 Condition	Status	Evidence
Operating Conditions			
4.	<p>The Applicant must:</p> <p>(a) implement best practice management to minimise the construction, operational and road transportation noise of the development;</p> <p>(b) minimise the noise impacts of the development during meteorological conditions when the noise criteria in this consent do not apply (see Appendix 3);</p> <p>(c) carry out noise monitoring (at least every 3 months or as otherwise agreed with the Secretary) to determine whether the development is complying with the relevant conditions of this consent; and</p> <p>(d) regularly assess noise monitoring data and modify and/or stop operations on site to ensure compliance with the relevant conditions of this consent, to the satisfaction of the Secretary.</p> <p><i>Note: Required frequency of noise monitoring may be reduced if approved by the Secretary</i></p>	Not compliant	<p>a) The audit site inspection found that the operational best practice measures were (BPM) were generally being implemented as per Section 6.3 of the approved NMP. Section 6.5 of the approved NMP notes that an assessment of any revised BPM applicable to the site will be undertaken on an annual basis and included in WQ AR documents. Specific commentary on BPM review was not included in the 2020 AR document. It is recommended that WQ include comment on the annual BPM review in future ARs.</p> <p>b) Sighted examples of 'Daily Inspection Logs' completed by WQ Quarry Manager dated 15/06/20 and 18/09/20, 19/10/20, 11/2/21, 09/03/21 which referenced consideration of dust and noise controls for trucks leaving site, maintenance on sand plant. It is recommended that WQ consider adding a section to the 'Daily Inspection Logs' to allow for comments on metrological conditions and/or any corrective actions taken to minimise noise emissions from site to be noted by the Quarry Manager. It is also recommended that WQ consider making real-time meteorological data available to the Quarry Manager to assist in reviewing noise-enhancing weather conditions;</p> <p>c) The approved Noise Management Plan allows for bi-annual noise monitoring. Monitoring events completed during the audit period by MAC included: - 28/08/18 and 29/08/18; - 02/04/19 and 03/04/19. A period greater than six months had elapsed since the previous monitoring event. This was reported as a non-compliance in the 2018-19 AR. Recommend that noise monitoring is undertaken bi-annually in accordance with the approved NMP. - 11 and 12/9/19; - 13/3/20; - 01/9/20; and - 31/03/20.</p> <p>d) See comments on Schedule 3, Condition 4(b) above.</p>
Noise Management Plan			
5.	<p>The Applicant must prepare a Noise Management Plan for the development to the satisfaction of the Secretary. This plan must:</p> <p>(a) be prepared in consultation with the EPA;</p> <p>(b) be submitted to the Secretary within three months of the determination of Modification 1, unless otherwise agreed by the Secretary;</p> <p>(c) describe the measures to be implemented to ensure:</p> <ul style="list-style-type: none"> • compliance with the noise criteria and operating conditions of this consent; • best practice management is being employed; and • the noise impacts of the development are minimised during meteorological conditions under which the noise criteria in this consent do not apply (see NPfl); <p>(d) describe the proposed noise management system; and</p> <p>(e) include a monitoring program to be implemented to measure noise from the development against the noise criteria in Table 2, and which evaluates and reports on the effectiveness of the noise management system on site.</p> <p>The Applicant must implement the Noise Management Plan as approved from time to time by the Secretary.</p>	Compliant	<p>Wallerawang Quarry currently operates under the NMP 2021 (version 3.0) approved by the Secretary 10/02/2021. Recommend including the approval letter from DPIE as an Appendix to the NMP.</p> <p>a) Viewed email from AI to EPA dated 18/3/20 requesting EPA to review the draft updated NMP following the approval of MOD 3. Viewed response from EPA dated 9/4/20 confirming no comments (Appendix A of NMP).</p> <p>b) MOD 1 was approved 25/8/17. 2018 IEA sighted email submitting the NMP to DPIE on 24/11/17, within 3 months of approval.</p> <p>c) Section 5 of the NMP describes the noise criteria and operating conditions of this consent, Section 6.5 of the NMP describes BPM implemented on site to minimise noise impacts; and Table 6.3 lists out the measures to be implemented following meteorological conditions under which the noise criteria of the consent do not apply. See Schedule 3, Condition 4 above for recommendations in relation to WQ documenting measures to minimise noise emissions from site.</p> <p>d) Section 6 of the NMP describes the WQ noise management system.</p> <p>e) Section 7 describes the noise monitoring program to be implemented at the Quarry. Section 7.4 provides details on how the Quarry evaluates the effectiveness of the noise management system. Section 5 of the NMP notes that WQ 'does not currently hold any agreements with residents for noise levels exceeding the noise criteria of Condition 3(3) (Table 2) of DA 344-11-2001.' It is recommended that the NMP is revised to modify the siting of attended monitoring location N2 or to add a fourth monitoring location representative of the closest privately-owned residence (see Schedule 3, Condition 3).</p>

Cond	DA 344-11-2001 Condition	Status	Evidence																
BLASTING																			
Blasting Impact Assessment Criteria																			
6.	<p>The Applicant must ensure that blasting on site does not cause any exceedance of the criteria in Table 3.</p> <table border="1"> <caption>Table 3: Blasting Criteria</caption> <thead> <tr> <th>Receiver</th> <th>Airblast overpressure (dB(Lin Peak))</th> <th>Ground vibration (mm/s)</th> <th>Allowable exceedance</th> </tr> </thead> <tbody> <tr> <td>Any residence on privately-owned land</td> <td>120</td> <td>10</td> <td>0%</td> </tr> <tr> <td>All public infrastructure</td> <td>115</td> <td>5</td> <td>5% of the total number of blasts over a period of 12 months</td> </tr> <tr> <td></td> <td>-</td> <td>50</td> <td>0%</td> </tr> </tbody> </table> <p>However, these criteria do not apply if the Applicant has a written agreement with the relevant landowner or infrastructure owner to exceed the limits in Table 3, and the Applicant has advised the Department in writing of the terms of this agreement.</p>	Receiver	Airblast overpressure (dB(Lin Peak))	Ground vibration (mm/s)	Allowable exceedance	Any residence on privately-owned land	120	10	0%	All public infrastructure	115	5	5% of the total number of blasts over a period of 12 months		-	50	0%	Compliant	<p>The following blast reports were reviewed:</p> <ul style="list-style-type: none"> - 2018 (from April): dated 27/4/18, 9/5/18, 20/11/18, 18/12/18 - 2019: dated 19/2/19, 1/4/19, 11/6/19, 15/8/19, 20/9/19 - 2020: dated 21/1/20, 12/5/20, 30/6/20, 9/9/20, 16/9/20, 16/12/20 - 2021: sighted monitoring reports completed by Premier Drill and Blast dated 24/2/21, 13/04/21. <p>No exceedances of the blast impact criteria occurred during the audit period occurred. Blast monitoring point B4 was installed April 2019.</p>
Receiver	Airblast overpressure (dB(Lin Peak))	Ground vibration (mm/s)	Allowable exceedance																
Any residence on privately-owned land	120	10	0%																
All public infrastructure	115	5	5% of the total number of blasts over a period of 12 months																
	-	50	0%																
Property Inspections																			
7.	<p>If the Applicant receives a written request from the owner of any privately-owned land within 2 kilometres of the site for a property inspection to establish the baseline condition of any buildings and structures on their land, or to have a previous property inspection updated, then within 2 months of receiving this request the Applicant must:</p> <p>(a) commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties to:</p> <ul style="list-style-type: none"> • establish the baseline condition of any buildings and other structures on the land, or update the previous property inspection report; and • identify measures that should be implemented to minimise the potential blasting impacts of the development on these buildings and structures; and <p>(b) give the landowner a copy of the new or updated property inspection report.</p> <p>If there is a dispute over the selection of the suitably qualified, experienced and independent person, or the Applicant or the landowner disagrees with the findings of the property inspection report, either party may refer the matter to the Secretary for resolution.</p>	Compliant	No written request from any privately owned land within 2kms was received during the audit period (AI per comms).																
Property Investigations																			
8.	<p>If the owner of any privately-owned land within 2 kilometres of the site or any other landowner where the Secretary is satisfied an investigation is warranted, or claims in writing that buildings or structures on their land have been damaged as a result of blasting on the site, then within 2 months of receiving this written claim the Applicant must:</p> <p>(a) commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties to investigate the claim; and</p> <p>(b) give the landowner a copy of the property investigation report.</p> <p>If this independent property investigation confirms the landowner's claim, and both parties agree with these findings, then the Applicant must repair the damage to the satisfaction of the Secretary.</p> <p>If there is a dispute over the selection of the suitably qualified, experienced and independent person, or the Applicant or the landowner disagrees with the findings of the independent property investigation, then either party may refer the matter to the Secretary for resolution.</p>	Compliant	No written request from any privately owned land within 2kms was received during the audit period (AI per comms).																
Operating Conditions																			
9.	<p>During blasting operations, the Applicant must:</p> <p>(a) implement best practice management to:</p>	Compliant	<p>a) During the audit period there were no exceedances of blasting criteria. No complaints relating to blasting occurred during the audit period. AI noted no impacts to blasting</p>																

Cond	DA 344-11-2001 Condition	Status	Evidence																			
	<ul style="list-style-type: none"> protect the safety of people and livestock; protect public or private infrastructure and property from damage; and minimise the dust and fume emissions; <p>(b) operate a suitable system to enable the local community to get up-to-date information on the proposed blasting schedule on site; and</p> <p>(c) carry out regular monitoring to determine whether the development is complying with the relevant conditions of this consent, to the satisfaction of the Secretary.</p>		<p>dust, fume to Highway.</p> <p>Section 6.1.7 of the Blast MP details measures to reduce fume emissions. It is recommended that comments on fume management are included in future blast monitoring reports.</p> <p>b) Section 6.1.1 of the Blast MP details the system to enable the community to get up to date information. Examples of WQ Blast Notices were sighted, including for events on 24/02/21 and 13/04/21.</p> <p>c) Blast monitoring has been undertaken in accordance with the monitoring schedule within Section 7 of the Blast MP, where monitoring is required for each blast event.</p>																			
Blast Management Plan																						
10.	<p>The Applicant must prepare a Blast Management Plan for the development to the satisfaction of the Secretary. This plan must:</p> <p>(a) be submitted to the Secretary for approval within three months of the determination of Modification 1, unless otherwise agreed by the Secretary;</p> <p>(b) describe the measures to be implemented to ensure compliance with the blast criteria and operating conditions of this consent;</p> <p>(c) include measures to manage flyrock to ensure the safety of people and livestock and to protect properties;</p> <p>(d) include a monitoring program for evaluating and reporting on compliance with the blasting criteria in this consent;</p> <p>(e) include local community notification procedures for the blasting schedule, in particular to nearby residences; and</p> <p>(f) include a protocol for investigating and responding to complaints related to blasting operations.</p> <p>The Applicant must implement the Blast Management Plan as approved from time to time by the Secretary.</p>	Compliant	<p>Wallerawang Quarry currently operates under the Blast Management and Explosives Control Plan Aug 20 (Version 2.3) approved by the Secretary 19/08/20. Recommend including the approval letter from DPIE as an Appendix to the BMP.</p> <p>a) The 2018 IEA sighted an email dated 24/11/2017 from RW Corkery submitting the Blast MP to DPIE. MOD 1 was approved 25/8/17, which is within 3 months.</p> <p>b) Section 6 of the Blast MP provides details on measures to be implemented to ensure compliance.</p> <p>c) Section 6.1.5 provides details on managing flyrock;</p> <p>d) Section 7 includes details on the blast monitoring program;</p> <p>e) Section 6.1.1 provides the procedures for blasting scheduling and community notification; and</p> <p>f) Section 6.2.2 details the protocol for responding to complaints.</p>																			
AIR QUALITY																						
Air Quality Criteria																						
11.	<p>The Applicant must ensure that particulate matter emissions generated by the development do not cause exceedances of the criteria in Table 4 at any residence on privately-owned land.</p> <p><i>Table 4: Air quality criteria</i></p> <table border="1"> <thead> <tr> <th>Pollutant</th> <th>Averaging period</th> <th>Criterion</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Particulate matter < 10 µm (PM₁₀)</td> <td>Annual</td> <td>^a < 25 µg/m³</td> </tr> <tr> <td>24 hour</td> <td>^b 50 µg/m³</td> </tr> <tr> <td rowspan="2">Particulate matter < 2.5 µm (PM_{2.5})</td> <td>Annual</td> <td>^a < 8 µg/m³</td> </tr> <tr> <td>24 hour</td> <td>^b 25 µg/m³</td> </tr> <tr> <td>Total suspended particulate (TSP) matter</td> <td>Annual</td> <td>^a < 90 µg/m³</td> </tr> <tr> <td>^d Deposited dust</td> <td>Annual</td> <td>^b 2 g/m²/month ^c 4 g/m²/month</td> </tr> </tbody> </table> <p><i>Notes:</i></p> <p>a Total impact (i.e. incremental increase in concentrations due to the development plus background concentrations due to all other sources). NSW Government Department of Planning & Environment 12</p> <p>b Incremental impact (i.e. incremental increase in concentrations due to the development on its own).</p> <p>c Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fire incidents or any other activity agreed by the Planning Secretary.</p> <p>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.</p>	Pollutant	Averaging period	Criterion	Particulate matter < 10 µm (PM ₁₀)	Annual	^a < 25 µg/m ³	24 hour	^b 50 µg/m ³	Particulate matter < 2.5 µm (PM _{2.5})	Annual	^a < 8 µg/m ³	24 hour	^b 25 µg/m ³	Total suspended particulate (TSP) matter	Annual	^a < 90 µg/m ³	^d Deposited dust	Annual	^b 2 g/m ² /month ^c 4 g/m ² /month	Not compliant	<p>PM2.5 24hr criteria was added to the consent on approval of MOD 3 on 26/2/20. The Air Quality Impact Assessment for MOD3 (Ramboll, 2019) predicted that no receptors would experience exceedances of the air quality impact criteria as a result of WQ operations.</p> <p>Deposited dust is required to be measured monthly and the particulate matter to be measured continuously. In accordance with Section 7.3.2 of the Air Quality Management Plan (AQMP), a Dust Master Pro has been installed and operating since February 2021 (AI, pers comm).</p> <p>The following Deposited dust non-compliances occurred during the audit period:</p> <ul style="list-style-type: none"> 2018 (from April) – No exceedances of criteria; 2019 – No exceedances of criteria. Two dust samples were not collected within the 30+/-2 days required under the relevant standard. November and December 2019 samples were collected after 33 and 35 days, respectively. These are considered to be administrative non-compliances given that the results were analysed and recorded; 2020 - January results exceeded the air quality criteria but were not considered to be an exceedance due to extraordinary regional bushfire events and their impact on monitoring results (as per Table 6.2 of the AQMP); <p>No other exceedances of impact criteria. Two dust samples were not collected within 30+/-2 days required under the relevant standard. February and March 2020 samples were collected after 27 and 33 days, respectively. These are considered to be administrative non-compliances given that the results were analysed and recorded;</p> <ul style="list-style-type: none"> 2021 (during the audit period) – No exceedances of criteria. <p>Recommend ensuring that dust sampling is undertaken within 30+/-2 day period required under the relevant standard.</p>
Pollutant	Averaging period	Criterion																				
Particulate matter < 10 µm (PM ₁₀)	Annual	^a < 25 µg/m ³																				
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^d Deposited dust	Annual	^b 2 g/m ² /month ^c 4 g/m ² /month																				

Cond	DA 344-11-2001 Condition	Status	Evidence
12.	The air quality criteria in Table 4 do not apply if the Applicant has an agreement with the owner/s of the relevant residence or infrastructure to exceed the air quality criteria, and the Applicant has advised the Department in writing of the terms of this agreement.	Not triggered	WQ does not currently have any agreements with relevant residences or infrastructure (AI per comms).
Operating Conditions			
13.	<p>The Applicant must:</p> <p>(a) implement best practice management to minimise the dust emissions of the development;</p> <p>(b) regularly assess meteorological and air quality monitoring data and relocate, modify and/or stop operations on site to ensure compliance with the air quality criteria in this consent;</p> <p>(c) minimise the air quality impacts of the development during adverse meteorological conditions and extraordinary events (see note c under Table 4);</p> <p>(d) monitor and report on compliance with the relevant air quality conditions in this consent; and</p> <p>(e) minimise the area of surface disturbance and undertake progressive rehabilitation of the site, to the satisfaction of the Secretary.</p>	Not compliant	<p>a) Table 6.1 of the AQMP lists out the proactive mitigation and management measures for site. It is recommended that WQ consider adding a section to the 'Daily Inspection Logs' to allow for comments on metrological conditions and/or any corrective management actions taken to minimise dust emissions from site to be noted by the Quarry Manager.</p> <p>b) Section 7.2 of the AQMP list out the meteorological data and reasoning for positioning. Table 6.2 of the AQMP lists out the Trigger and Responsive actions for the Quarry including relocation of activities, or suspension of activities. It is recommended that WQ consider making real-time meteorological data available to the Quarry Manager to allow the review of weather conditions to assist in dust management.</p> <p>c) As per above.</p> <p>d) Section 9 of the AQMP provides details on reporting on air quality conditions.</p> <p>e) View rehabilitation and bunding areas during site inspection. Progressive rehabilitation is described in the Rehabilitation Management Plan (see Schedule 3, Conditions 30 – 33). Disturbed areas on site were generally consistent with concept plans presented in the EIS and MOD3.</p> <p>The AQMP requires dust deposition monitoring to be undertaken in accordance with AS/NZS 3580.10.1:2003. The monitoring period prescribed in this standard is 30 +/- 2 days. On four occasions during the audit period, the timing of deposition dust monitoring periods did not align with the relevant standard (See Schedule 3, Condition 11 above). These are considered to be administrative non-compliances given that the results were analysed and recorded outside of the approved period.</p>
Air Quality Management Plan			
14.	<p>The Applicant must prepare an Air Quality Management Plan for the development to the satisfaction of the Secretary. This plan must:</p> <p>(a) be submitted to the Secretary for approval within three months of the determination of Modification 1, unless otherwise agree by the Secretary;</p> <p>(b) describe the measures to be implemented to ensure:</p> <ul style="list-style-type: none"> • compliance with the air quality criteria and operating conditions of this consent; • best practice management is being employed; and • the air quality impacts of the development are minimised during adverse meteorological conditions and extraordinary events; <p>(c) describe the proposed air quality management system;</p> <p>(d) include an air quality monitoring program that:</p> <ul style="list-style-type: none"> • is capable of evaluating the performance of the development; • includes a protocol for determining any exceedances of the relevant conditions of consent; • effectively supports the air quality management system; and • evaluates and reports on the adequacy of the air quality management system. <p>The Applicant must implement the approved Air Quality Management Plan as approved from time to time by the Secretary.</p>	Compliant	<p>Wallerawang Quarry currently operates under the AQMP 2021 (version 3.0) approved by the Secretary 03/02/21. Recommend including the approval letter from DPIE as an Appendix to the AQMP.</p> <p>a) MOD 1 was approved 25/08/17. 2018 IEA sighted email submitting the AQMP to DPIE on 24/11/17, within 3 months of approval.</p> <p>b) AQMP Section 5 contains details on compliance with criteria, AQMP Section 6.4 includes details on best practice management and Table 6.2 describes actions to minimise air quality impacts during adverse meteorological conditions.</p> <p>c) Section 6 of the AQMP describes the air quality management system.</p> <p>d) Section 7 of the AQMP provides details of the air quality monitoring program and shows it is capable for evaluating the performance of the development and effectively supports the air quality management system. Section 8 of the AQMP lists the protocol for determining any exceedances and Section 9 details the reporting and adequacy of monitoring data.</p> <p>During the site inspection, minimal visible dust was being generated by site plant and equipment, with watercarts operating on haul roads, and water available in tanks located adjacent to internal processing areas (see Plate 4).</p>
METEOROLOGICAL MONITORING			
15.	For the life of the development, the Applicant must ensure that there is a suitable meteorological station operating in	Compliant	a) Section 7.2 of the AQMP states that the WQ meteorological station is run in accordance with

Cond	DA 344-11-2001 Condition	Status	Evidence
	<p>close proximity to the site that:</p> <p>(a) complies with the requirements in the Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales (DEC, 2007); and</p> <p>(b) is capable of measuring meteorological conditions in accordance with the NSW Noise Policy for Industry (EPA, 2017), unless a suitable alternative is approved by the Secretary following consultation with EPA.</p>		<p>Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales.</p> <p>AI (pers comm) noted that the site weather station was upgraded in late 2020 and was providing calibrated data from February 2021. Viewed automatic weather station calibration quote from ALS dated 18/11/20 and email with report from ALS dated 01/12/20 confirming that calibration was undertaken.</p> <p>b) As per Table 7.1 of the AQMP, the meteorological station is capable of measuring rainfall, air temperature, relative humidity, wind direction, wind speed and sigma theta. The site of the WQ meteorological monitoring station was inspected during the site component of the audit.</p>
SOIL AND WATER			
Water Supply			
16.	The Applicant must ensure that it has sufficient water for all stages of the development, and if necessary, adjust the scale of operations under the consent to match its available water supply, to the satisfaction of the Secretary.	Compliant	<p>Viewed WQ AR documents for the audit period. No water supplies were purchased in the 2108/19, 2019/20 periods. AI (pers comm) confirmed no purchases during the 2020/21 period to date.</p> <p>The audit site inspection confirmed that storage cells and dams were in place generally as approved in the EIS, to allow for the reuse of water within the site for processing (see Plate 5 to Plate 7).</p> <p>WQ holds the following WALs to provide flexibility to obtain water via groundwater or Cox's River if required in a period of drought conditions:</p> <ul style="list-style-type: none"> - WAL42930 (Coxs Fractured Groundwater); - WAL42390 Coxs Fractured Groundwater (nil allocation - superseded); - WAL41884 (Upper Nepean and Upstream Warragamba Water Source) (nil allocation); and - Works Approval for bore (GW) and pump (SW).
Water Discharges			
17.	The Applicant must comply with the discharge limits in any EPL, or with section 120 of the POEO Act.	Compliant	<p>Two discharges from site occurred during the reporting period, from:</p> <ul style="list-style-type: none"> - SD1 on 6 April 06/04/20 (referenced in Section 7.2.2 of the 2019/20 AR). Water quality results reported in the AR indicate the discharge water quality was within discharge limits specified in EPL 13172 for all parameters; and - SD1 on 24/03/21. Sighted Envirolab data provided by AI dated 31/03/21, which confirmed Total Suspended Solids in exceedance of EPL criteria (see Table 2). AI provided site rainfall data for the day prior to the elevated monitoring result, which exceeded the 5-day 95th percentile of ~55mm rain.
Soil and Water Management Plan			
18.	<p>The Applicant must prepare a Soil and Water Management Plan for the development to the satisfaction of the Secretary. This plan must:</p> <p>(a) be prepared by suitably qualified and experienced person/s approved by the Secretary;</p> <p>(b) be prepared in consultation with the EPA, DPIE - Water and WaterNSW;</p> <p>(c) be submitted to the Secretary for approval within three months of the determination of Modification 1 and Modification 3, unless otherwise agreed by the Secretary; and</p> <p>(d) include a:</p>	Compliant	<p>Wallerawang Quarry currently operates under the Soil and Water Management Plan April 2019 approved by the Secretary on 03/04/19. AI (pers comm) noted later version of the SWMP was in preparation at the time of audit [and subsequently approved 16/06/21]. Recommend including the approval letter from DPIE as an Appendix to the SWMP.</p> <ul style="list-style-type: none"> a) Alex Irwin from RW Corkery was approved to prepare the SWMP by the Secretary in a letter from DPE dated 21/12/2017, included in Appendix 1 of the SWMP. b) The SWMP was prepared in consultation with the EPA, DPI Water and WaterNSW. (Appendix 2) c) The 2018 IEA sighted an email dated 24/11/2017 from RW Corkery submitting the SWMP to DPIE. MOD 1 was approved 25/8/17, which is within 3 months. MOD3 was approved 26/2/20. DPIE provided review comments on MOD3 SWMP on 22/12/20 and DPIE-NRAR provided comment on 08/02/21.
	<p>I. Site Water Balance that includes:</p> <ul style="list-style-type: none"> • details of: <ul style="list-style-type: none"> a. sources and security of water supply; 	Compliant	<p>Site Water Balance (SWMP Section 7.3):</p> <ul style="list-style-type: none"> c) Section 7.1 describes the security of water through the life of mine. d) Section 7.2 describes water use and Section 9 describes the management on site.

Cond	DA 344-11-2001 Condition	Status	Evidence
	<ul style="list-style-type: none"> b. water use and management on site; c. any off-site water transfers; and d. reporting procedures; and • measures to be implemented to minimise clean water use on site; 		<ul style="list-style-type: none"> e) AI (pers comm) confirmed no off site transfers. f) Section 12 describes reporting procedures. <p>Appendix 3 of the SWMP contains the erosion and sediment control plan which provides measures to be implemented to minimise clean water use on site. Sediment dams, drains and settling cells were inspected during the audit period and found to be generally well maintained and sited in accordance with the EIS concept layout plans.</p>
	<p>II. Surface Water Management Plan, that includes:</p> <ul style="list-style-type: none"> • a program for obtaining detailed baseline data on surface water flows and quality in water bodies that could potentially be affected by the development; • a detailed description of the surface water management system on site including the: <ul style="list-style-type: none"> a. clean water diversion system; b. erosion and sediment controls; c. dirty water management system; and d. water storages; and • a program to monitor and report on: <ul style="list-style-type: none"> a. any surface water discharges; b. the effectiveness of the water management system, c. the quality of water discharged from the site to the environment; d. surface water flows and quality in local watercourses; 	Compliant	<p>Surface Water Management Plan (Section 7.3 of the SWMP)</p> <ul style="list-style-type: none"> - Section 10.2.1 and 10.3.1 provides details on the monitoring locations and sampling frequency of the surface water monitoring. Section 10.7 describes the reporting of this monitoring - Section 6 (including Appendix 3) describes the surface water management system. <ul style="list-style-type: none"> a) Section 9.2 describes the clean water diversion system b) Section 9.3 describes the erosion and sediment controls c) Section 8 describes the dirty water management system d) Section 5.2 provides details on the water storage at the Quarry - Section 10 describes the water monitoring system on site as well as the reporting requirements. - a) Section 10.2.1 states monitoring is undertaken at SD 1 SB 2 and upstream and downstream of the Quarry at Coxs River - b) Section 10.4.1 provides details of the monitoring criteria and that it must comply with Section - c) As per (a) above monitoring completed upstream and downstream of the discharge point, and reporting against criteria in Table 10.4 alerts to the quality of water that is discharged - d) As per above.
	<p>III. Groundwater Management Plan that includes:</p> <ul style="list-style-type: none"> • a provision that requires the Applicant to obtain appropriate water licence(s) to cover the volume of any unforeseen groundwater inflows into the quarry from the quarry face or floor; and • a monitoring program to manage potential impacts, if any, on any alluvium and associated surface water source near the proposed extraction area that includes: <ul style="list-style-type: none"> a. identification of a methodology for determining threshold water level criteria; b. contingency measures in the event of a breach of thresholds; and c. a program to regularly report on monitoring. <p>The Applicant must implement the approved Soil and Water Management Plan as approved from time to time by the Secretary.</p>	Compliant	<p>Groundwater Management Plan</p> <ul style="list-style-type: none"> - Section 3.3 provides for a provision that requires the Applicant to obtain appropriate water licence(s) to cover the volume of any unforeseen groundwater inflows into the quarry from the quarry face or floor. - Section 10.2.2, 10.3.2 and 10.4.2 provides an overview of the groundwater monitoring system and required criteria. <ul style="list-style-type: none"> a) Section 10.4.2 provides information on how the groundwater level was determined. b) Section 11.2.4 provides contingency measures in the case of a breach of threshold. c) Section 10.6.2 and 12.2 describes the program to regularly report on monitoring. <p>AI (pers comm) noted as a commitment in the MOD3 SEE had not been undertaken, as the two groundwater bores (GW111587 and GW801271) in the vicinity of the WQ site were outside of predicted drawdown influence due to quarry operations. These bores will continue to be monitored, in accordance with the SWMP.</p>
TRAFFIC AND TRANSPORT			
Monitoring of Coal Transport			
19.	The Applicant must keep accurate records of all laden truck movements to and from the site and publish a summary of records on its website every 6 months.	Compliant	Six-monthly records of laden truck movements during the audit period to 2021 were available on the WQ website. Viewed record of 2,139 truck movements during from 01/01/21 to 23/04/21.
Operating Conditions			
20.	<p>The Applicant must:</p> <ul style="list-style-type: none"> a. ensure that all laden trucks entering or exiting the site have their loads covered, with the exception of loads consisting solely of boulders greater than one tonne in weight; b. ensure that all laden trucks exiting the site are cleaned of material that may fall from vehicles, before leaving the site; and 	Compliant	<ul style="list-style-type: none"> a) b) Site inspection confirmed that laden trucks exiting site had their loads covered when leaving site. c) Site inspection confirmed that the wheel wash remains in place to clean trucks prior to leaving site. d) Site inspection noted that clear signage was not displayed on all trucks leaving site. Deemed compliant by 2018 IEA as the condition to displate signage cannot be formally enforced by WQ for external operators accessing site.

Cond	DA 344-11-2001 Condition	Status	Evidence
	c. use its best endeavours to ensure that appropriate signage is displayed on all trucks used to transport product from the development so they can be easily identified by road users.		
Protection of Aboriginal Heritage			
21.	The Applicant must ensure that the development does not cause any direct or indirect impact on any identified heritage item located outside the approved disturbance area, beyond those predicted in the document/s listed in condition 2(c) of Schedule 2.	Compliant	Section 5.6 of the ACHMP states any proposed works outside the current approval area resulting in vegetation clearing or ground surface disturbance will require heritage assessment involving a suitably qualified archaeologist and RAPs (if required). AI (pers comms) confirmed one area approved under MOD3 was salvaged during the audit period. Viewed 'Aboriginal Cultural Heritage Salvage Report, Wallerawang Quarry Modification 3' prepared by Ozark (April 2021). The report documents the salvage of site 45-1-2802 (WQ1) approved under MOD3, and in accordance with the ACHMP procedures (refer Schedule 3, Condition 23C).
22.	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 BCD, and work must not recommence in the area until authorised by NSW Police and BCD.	Not triggered	No suspected human remains discovered on site during the audit period (AI per comms)
23.	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) BCD must be contacted immediately.	Not Triggered	No previously unknown objects or place were discovered on site during the audit period (AI per comms)
23A.	Work in the immediate vicinity may only recommence if: a) the potential Aboriginal object or Aboriginal place is confirmed by BCD upon consultation with the Registered Aboriginal Parties not to be an Aboriginal object or Aboriginal Place; or b) the Aboriginal Cultural Heritage Management Plan required by condition 23C is revised to include the Aboriginal object or Aboriginal place and appropriate measures in respect of it, to the satisfaction of the Secretary; or c) the 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. (Not Triggered	As per Schedule 3, Condition 23.
23B.	The Applicant must ensure that all known Aboriginal objects or Aboriginal places on the site and within any offset areas are properly recorded, and those records are kept up to date, in the AHIMS Register.	Compliant	One known Aboriginal Site is located within the site boundary, recorded in AHIMS as site #45-1-2802 (WQ site reference: WQ1). This site was salvaged during the audit period (see Schedule 3, Condition 21).
Aboriginal Cultural Heritage Management Plan			
23C.	The Applicant must prepare an Aboriginal Cultural Heritage Management Plan for the development to the satisfaction of the Secretary. This plan must: (a) be prepared by suitably qualified and experienced person/s whose appointment has been endorsed by the Secretary; (b) be prepared in consultation with BCD and Registered Aboriginal Parties; (c) describe the measures to be implemented on the site or within any offset area to: (i) comply with the heritage-related operating conditions of this consent; (ii) ensure all workers receive suitable Aboriginal cultural heritage inductions prior to carrying out any activities which may cause impacts to Aboriginal objects or Aboriginal places, and that suitable records are kept of these inductions; (iii) protect, monitor and manage identified Aboriginal objects and Aboriginal places (including any proposed archaeological investigations of potential subsurface objects and salvage of objects within the approved disturbance area) in accordance with the commitments made in the document/s listed in condition 2Error! Reference source not found. of Schedule 2;	Not compliant	Wallerawang Quarry currently operates under the Aboriginal and Cultural Heritage Management Plan (ACHMP) Feb 2020 (version 2.3a) approved by the Secretary 19/08/21. Recommend including the approval letter from DPIE as an Appendix to the ACHMP. a) Appendix 1 of the ACHMP provides details of the author (OzArk). DPIE endorsement of OzArk as a suitable party to prepare the AHCMP could not be verified at the time of audit, however it is noted that the ACHMP was approved by DPIE. It is recommended that WQ seek formal DPIE endorsement of OzArk at the next revision of the ACHMP. b) ACHMP has been prepared by OzArk in consultation with RAPs (Appendix 2), BCD (Appendix 3) and DPIE. c) Section 2.1 shows compliance with consent conditions. Section 5.2 provides for inductions regarding Aboriginal cultural heritage to all staff. Section 5.3 allows for the protection, monitoring and managing of identified Aboriginal sites and places. Section 5.6 allows for the protection of Aboriginal sites and places outside the approved

Cond	DA 344-11-2001 Condition	Status	Evidence												
	<p>(iv) protect Aboriginal objects and Aboriginal places located outside the approved disturbance area from impacts of the development;</p> <p>(v) manage the discovery of suspected human remains and any new Aboriginal objects or Aboriginal places, including provisions for burials, over the life of the development;</p> <p>(vi) maintain and manage reasonable access for relevant Aboriginal stakeholders to Aboriginal objects and Aboriginal places (outside of the approved disturbance area); and</p> <p>(vii) facilitate ongoing consultation and involvement of Registered Aboriginal Parties in the conservation and management of Aboriginal cultural heritage on the site;</p> <p>(d) include a strategy for the care, control and storage of Aboriginal objects salvaged on site, in particular AHIMS Site #45-1-2802, both during the life of the development and in the long-term.</p>		<p>disturbance area.</p> <p>Sections 5.4 and 5.5 provides for the management of potential discovery of human remains or new Aboriginal objects.</p> <p>Section 5.6 allows for the management of access for Aboriginal stakeholders to Aboriginal sites or places outside approved disturbance area.</p> <p>Section 3.1 allows for the ongoing consultation and involvement of RAPs.</p> <p>d) Section 5.3.2 provides details on the care, control and storage of artefacts salvaged on site.</p> <p>Salvage of AHIMS Site #45-1-2802 was completed during the audit period (viewed completed 'Aboriginal Site Impact Recording Form' (ASIRF) completed on 22/01/21 and OzArk email to WQ dated 22/01/21). OzArk (2021) also note that the artefacts salvaged from site 45-1-2802 were reburied in accordance with Section 5.3.2 of the ACHMP following approval of the ASIRF by BCD.</p> <p>OzArk (2021) confirmed the reburial took place following the salvage on 20 January 2021. A site card was submitted to the AHIMS registrar for the reburial location. The AHIMS ID registered for the reburial location is 45-1-2826.</p>												
23D.	The Applicant must not commence any ground disturbance associated with Modification 3 until the Aboriginal Cultural Heritage Management Plan is approved by the Secretary.	Compliant	The ACHMP was approved in February 2020, prior to MOD 3 disturbance, which began on 02/06/20 (AI, pers comm).												
23E.	The Applicant must implement the Aboriginal Cultural Heritage Management Plan approved by the Secretary.	Compliant	See Schedule 3, Conditions 21 – 21D above.												
BIODIVERSITY AND REHABILITATION															
Biodiversity Offset Strategy															
24.	<p>By 28 February 2018, the Applicant must provide a Biodiversity Offset Strategy in accordance with the Framework for Biodiversity Assessment - NSW Biodiversity Offsets Policy for Major Projects, for the retirement of ecosystem and species credits as set out in Table 5, to the satisfaction of the Secretary and BCD.</p> <p><i>Table 5: Biodiversity credits to be retired</i></p> <table border="1"> <thead> <tr> <th>Credit type</th> <th>Number of Credits</th> </tr> </thead> <tbody> <tr> <td colspan="2">Ecosystem Credits</td> </tr> <tr> <td>PCT 732 – Broad-leaved Peppermint - Ribbon Gum grassy open forest in the north east of the South Eastern Highlands Bioregion</td> <td>120</td> </tr> <tr> <td>PCT 1093 – Red Stringybark – Brittle Gum – Inland Scribbly Gum dry open forest of the tablelands, South Eastern Highlands Bioregion</td> <td>34</td> </tr> <tr> <td colspan="2">Species Credits</td> </tr> <tr> <td>Purple Copper Butterfly</td> <td>184</td> </tr> </tbody> </table>	Credit type	Number of Credits	Ecosystem Credits		PCT 732 – Broad-leaved Peppermint - Ribbon Gum grassy open forest in the north east of the South Eastern Highlands Bioregion	120	PCT 1093 – Red Stringybark – Brittle Gum – Inland Scribbly Gum dry open forest of the tablelands, South Eastern Highlands Bioregion	34	Species Credits		Purple Copper Butterfly	184	Compliant	<p>WQ required the development a BOS for the retirement of ecosystem and species credits generated by the disturbance to 2.4 ha of native vegetation associated with MOD1. The 2018 IEA sited the Interim BOS which was submitted on 27/2/18 and DPIE letter dated 28/2/18 which confirmed they considered the Interim BOS satisfied this condition.</p> <p>Viewed confirmation by BCD as to the biodiversity credits to be retired on 14 June 2018 (Appendix 2 of BDMP).</p> <p>Section 1 of the BOS states it was developed in accordance with the required framework.</p>
Credit type	Number of Credits														
Ecosystem Credits															
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Purple Copper Butterfly	184														
Security of Offsets															
25.	<p>By 31 December 2018, unless otherwise agreed with the Secretary, the Applicant must make suitable arrangements to provide appropriate long-term security for the Biodiversity Offset Strategy, to the satisfaction of the Secretary. Any mechanism must remain in force in perpetuity.</p> <p><i>Note: Mechanisms to provide appropriate long-term security to the land within the Biodiversity Offset Strategy in accordance with the NSW Biodiversity Offset Policy for Major Projects 2014.</i></p>	Not compliant	<p>A Final BOS was submitted on 13/07/18 to DPIE. Viewed DPIE letter approving the BOS, dated 08/04/19. Viewed 'Statement Confirming Payment into the Biodiversity Conservation Fund for an offset obligation' for Walker Quarries Pty Limited from BCT, dated 26/05/20, which is outside of the date required under the condition to provide long-term security arrangements for the BOS. It is recommended that WQ seek DPIE approval for the long-term security arrangements confirmed for the BOS in 2020.</p>												
Biodiversity Management Plan															
26.	<p>The Applicant must prepare a Biodiversity Management Plan for the development to the satisfaction of the Secretary. This plan must:</p> <p>(a) be prepared by suitably qualified and experienced persons whose appointment has been endorsed by the Secretary;</p> <p>(b) be prepared in consultation with BCD;</p> <p>(c) be submitted to the Secretary within three months of providing a satisfactory Biodiversity Offset Strategy or by 31</p>	Compliant	<p>The Wallerawang Quarry operates under a Biodiversity Management Plan (BDMP) (dated September, 2020) was approved by the Secretary 08/04/19. Recommend including the approval letter from DPIE as an Appendix to the BDMP.</p> <p>a) Letter from DPIE dated 28/5/20 approved the suitability of Alex Walker to prepare the BDMP (Appendix 1).</p> <p>b) Letter from BCD dated 21/5/20 providing the Quarry with comments to address (Appendix 2), Further letter from BCD dated 7/9/20 reviewing the updated BMP addressing their previous</p>												

Cond	DA 344-11-2001 Condition	Status	Evidence
	<p>March 2018, whichever is earlier;</p> <p>(d) describe the short, medium, and long-term measures to be undertaken to manage the remnant vegetation and fauna habitat on the site</p> <p>(e) include a detailed description of the measures described in paragraph (d) to be implemented over the next 3 years (to be updated for each 3-year period following initial approval of the plan) including the procedures to be implemented for:</p> <ul style="list-style-type: none"> • maximising the salvage of environmental resources within the approved disturbance area, including tree hollows, vegetative and soil resources, for beneficial reuse in the enhancement of any biodiversity offset areas or site rehabilitation; • restoring and enhancing the quality of native vegetation and fauna habitat in any biodiversity offset and rehabilitation areas through assisted natural regeneration, targeted vegetation establishment and the introduction of fauna habitat features; • protecting vegetation and fauna habitat outside the approved disturbance area on-site; • minimising the impacts on native fauna, including undertaking pre-clearance surveys; • ensuring minimal environmental consequences for threatened species, populations and habitats, including the Purple Copper Butterfly; • collecting and propagating seed; • controlling weeds and feral pests; • controlling erosion; and • managing bushfire risk; <p>(f) include a program to monitor and report on the effectiveness of these measures, and progress against the performance and completion criteria;</p> <p>(g) identify the potential risks to the successful implementation of the Biodiversity Offset Strategy, and include a description of the contingency measures to be implemented to mitigate these risks; and</p> <p>(h) include details of who is responsible for monitoring, reviewing, and implementing the plan.</p> <p>The Applicant must implement the Biodiversity Management Plan as approved from time to time by the Secretary.</p>		<p>comments (Appendix 2). Table 1.4 and 1.5 of the BDMP how all comments have been addressed.</p> <p>c) 2018 IEA viewed letter from DPIE dated 28/2/18 confirming DPIE agree to the submission of the BDMP within 3 months of providing the final BOS.</p> <p>d) Section 4 provides measures (short, medium and long term measures to be undertaken to manage vegetation and habitat. Section 4.1 defines short term as activities with a duration between 18 months and 2 years, medium term is activities which require a longer term duration but has an end point and long term includes ongoing or repeat activities.</p> <p>e) Section 4.5 describes measures to maximise salvage of resources. Section 4.5 and 4.6 describes measures to restore and enhance native vegetation in both rehabilitation and offset areas. Section 4.4 and 5.2 describes measures to protect vegetation and habitat outside the approved disturbance area. Section 4.4.1 describes measures for vegetation clearing. Section 4.9 describes measures to support threatened species including the Purple Copper Butterfly Section 4.6 describes measures on collecting and propagating seed. Section 4.7 describes measures on controlling weeds and pests. Section 4.2, 4.4 and 4.8 describes measures on controlling erosion. A site inspection was completed by Resources Regulator on 12/3/19 which requested the Quarry to address matters on ongoing sediment and erosion control and weed management. The site inspection found that Sediment dams, drains and settling cells were inspected during the audit period and found to be generally well maintained and sited in accordance with the EIS concept layout plans.. Section 4.10 described measures on managing bushfire risk. Sighted copies of ecological pre-clearance survey reports completed by EcoPlanning in 02/11/18, 02/06/20 and 26/04/21. The pre-clearing reports that were reviewed provide document assessments generally in accordance with BDMP procedures and provide management requirements for WQ to implement prior to and during the clearing areas assessed. The area subject to the April 2021 EcoPlanning report was reviewed during the site inspection and habitat resourced had been marked in the field (see Plate 8).</p> <p>f) Section 6 includes a program to monitor and report on WQs effectiveness in monitoring and minimising potential impacts under the BDMP.</p> <p>g) Section 7 lists the potential risks to the implementation of the BOS and includes contingency measures to mitigate these risks.</p> <p>h) Section 10 lists the responsible parties for monitoring, reviewing and implementing the BDMP.</p> <p>Viewed Biodiversity Monitoring Reports completed by EcoPlanning for 2018 (survey completed 23/10/18), 2019 (survey completed on 18/10/19 and 30/10/19) and 2020 (survey completed 29 - 30/10/20) and is designed to assess the adequacy of the ecological management strategies and document monitoring surveys for the Purple Copper Butterfly. No large-scale disturbance to vegetation or soils which were attributable to the quarry operations were detected within the areas surrounding WQ operations by EcoPlanning. No observable or significant trends in the occurrence of specific threatened species or quality / quantity of available habitat were identified.</p> <p>Several exotic flora species which have potential to invade native vegetation were recorded within the site, including <i>Hypericum perforatum</i>* (St Johns Wort), <i>Pinus radiata</i>* (Radiata Pine) and <i>Rubus fruticosus sp. agg.</i>* (Blackberry) and was recommended to be targeted in a weed control program. It is recommended that WQ record and maintain mapping of areas treated for weeds in each year, to allow for the regular review of weed treatment methods and performance.</p>
Conservation Bond			
27.	Within six months of the approval of the Biodiversity Offset Strategy, unless otherwise agreed by the Secretary, the Applicant must lodge a Conservation Bond with the Department to ensure that the Biodiversity Offset Strategy is	Compliant	A Final BOS was submitted on 13/07/18 to DPIE and approved in September 2018. AI (pers comm) confirmed that biodiversity obligations for clearing to date have been retired through payment into the

Cond	DA 344-11-2001 Condition	Status	Evidence												
	<p>implemented in accordance with the performance and completion criteria in the Biodiversity Management Plan. The sum of the bond must be determined by:</p> <p>a) calculating the full cost of implementing the Biodiversity Offset Strategy at third party rates (other than land acquisition costs); and</p> <p>b) employing a suitably qualified, independent and experienced person to verify the calculated costs.</p> <p>The calculation of the Conservation Bond must be submitted to the Department for approval at least 1 month prior to the lodgment of the bond.</p>		Biodiversity Conservation Fund, as described in Section 5.2.4 of the BDMP (see Schedule 3, Condition 25), with initial payments made on 21/11/18 (i.e. within six months of approval of the BOS).												
28.	<p>The Conservation Bond must be reviewed and if required, an updated bond must be lodged with the Department within 3 months following:</p> <p>a) an update or revision to the Biodiversity Management Plan;</p> <p>b) the completion of an Independent Environmental Audit in which recommendations relating to the implementation of the Biodiversity Offset Strategy have been made; or</p> <p>c) in response to a request by the Secretary.</p> <p>If the Biodiversity Offset Strategy is completed generally in accordance with the completion criteria in the Biodiversity Management Plan to the satisfaction of the Secretary, the Secretary will release the bond.</p> <p>If the Biodiversity Offset Strategy is not completed generally in accordance with the completion criteria in the Biodiversity Management Plan, the Secretary will call in all, or part of, the conservation bond, and arrange for the completion of the relevant works.</p>	Not triggered	AI (pers comm) confirmed no requirement under the condition to amend the Conservation Bond since the initial payments made in May 2020 (see Schedule 3, Condition 25).												
Biodiversity Credits Required for Modification 3															
28A.	<p>The Applicant must retire biodiversity credits for Stages A to D of the development approved under Modification 3 (see Figure 2 in Appendix 1) as specified in Table 5A below, prior to commencing vegetation clearing in that Stage. The retirement of credits must be carried out in consultation with BCD and in accordance with the Biodiversity Offsets Scheme of the BC Act, to the satisfaction of the BCT.</p> <p><i>Table 5A: Biodiversity credit requirements</i></p> <table border="1"> <thead> <tr> <th>Credit Type</th> <th>Credits Required</th> </tr> </thead> <tbody> <tr> <td colspan="2">Ecosystem Credits</td> </tr> <tr> <td>Tranche 1 - Credits to be retired for Stage A PCT 1093 – 100 credits PCT 732 – 36 credits</td> <td>136</td> </tr> <tr> <td>Tranche 2 - Credits to be retired for Stage B PCT 1093 – 64 credits PCT 732 – 103 credits</td> <td>167</td> </tr> <tr> <td>Tranche 3 - Credits to be retired for Stage C PCT 1093 – 52 credits PCT 732 – 75 credits</td> <td>127</td> </tr> <tr> <td>Tranche 4 - Credits to be retired for Stage D PCT 1093 – 57 credits</td> <td>57</td> </tr> </tbody> </table> <p><i>Note: The stages referenced in Table 5A are shown in Figure 2 in Appendix 1.</i></p>	Credit Type	Credits Required	Ecosystem Credits		Tranche 1 - Credits to be retired for Stage A PCT 1093 – 100 credits PCT 732 – 36 credits	136	Tranche 2 - Credits to be retired for Stage B PCT 1093 – 64 credits PCT 732 – 103 credits	167	Tranche 3 - Credits to be retired for Stage C PCT 1093 – 52 credits PCT 732 – 75 credits	127	Tranche 4 - Credits to be retired for Stage D PCT 1093 – 57 credits	57	Compliant	<p>Viewed email dated 19/5/20 from BCT confirming receiving an application to make a payment into the Biodiversity Conservation Fund and approving the application listing the total required amount for payment.</p> <p>Viewed 'Statement Confirming Payment into the Biodiversity Conservation Fund for an offset obligation' for Walker Quarries Pty Limited from BCT, dated 26/05/20.</p>
Credit Type	Credits Required														
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Rehabilitation Objectives															
29.	<p>The Applicant must rehabilitate the site to the satisfaction of RR and the Secretary. This rehabilitation must be generally consistent with the proposed rehabilitation activities described in the documents listed in condition 2 of Schedule 2 (and shown conceptually in the Rehabilitation Plan in Appendix 2), and comply with the objectives in Table 6.</p> <p><i>Table 6: Rehabilitation Objectives</i></p> <table border="1"> <thead> <tr> <th>Feature</th> <th>Objective</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> </tr> </tbody> </table>	Feature	Objective			Compliant	<p>AI (pers comm) noted that limited rehabilitation was undertaken during the audit period, as described in AR documents (also see comments on Schedule 3, Conditions 30 and 31 below).</p> <p>Due to the status of the site during the audit period, DPIE and DPIR-RR have not been required to approval final rehabilitation of the site against the objectives of this condition. The audit site inspection found that existing rehabilitation areas were generally developing in accordance with the requirements of this condition, and the approved Mining Operations Plan (MOP). This includes:</p> <ul style="list-style-type: none"> - Landform: The landform appears stable, with drainage structures in place; 								
Feature	Objective														

Cond	DA 344-11-2001 Condition	Status	Evidence								
	<table border="1"> <tr> <td>All areas of the site affected by the development</td> <td> <ul style="list-style-type: none"> Safe Hydraulically and geotechnically stable Non-polluting Fit for the intended <i>post-development</i> 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 </td> </tr> <tr> <td>Surface Infrastructure</td> <td> <ul style="list-style-type: none"> Decommissioned and removed, unless otherwise agreed by the Secretary </td> </tr> <tr> <td>Quarry benches and pit floor</td> <td> <ul style="list-style-type: none"> Landscaped and vegetated using native tree and understorey species </td> </tr> <tr> <td>Final Void</td> <td> <ul style="list-style-type: none"> Minimise the size, depth and slope of the batters of the final void Minimise the drainage catchment of the final void </td> </tr> </table>	All areas of the site affected by the development	<ul style="list-style-type: none"> Safe Hydraulically and geotechnically stable Non-polluting Fit for the intended <i>post-development</i> 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	<ul style="list-style-type: none"> Decommissioned and removed, unless otherwise agreed by the Secretary 	Quarry benches and pit floor	<ul style="list-style-type: none"> Landscaped and vegetated using native tree and understorey species 	Final Void	<ul style="list-style-type: none"> Minimise the size, depth and slope of the batters of the final void Minimise the drainage catchment of the final void 		<ul style="list-style-type: none"> Erosion & Sedimentation: Minimal examples of active erosion observed; Species mix and tree densities in existing WSEA rehabilitation were observed to be developing established, towards alignment with surrounding vegetation (see Plate 9).
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Progressive Rehabilitation											
30.	<p>The Applicant must rehabilitate the site progressively, that is, as soon as reasonably practicable following disturbance. All reasonable and feasible measures must be taken to minimise the total area exposed for dust generation at any time. Interim stabilisation measures must be implemented where reasonable and feasible to control dust emissions in disturbed areas that are not active and which are not ready for final rehabilitation.</p> <p>Note:</p> <ul style="list-style-type: none"> <i>It is accepted that parts of the site that are progressively rehabilitated may be subject to further re-disturbance in future.</i> 	Compliant	<p>Viewed audit period AR and MOP documents. Section 2.3.10 of the MOP states 'Opportunities for progressive rehabilitation during the term of this MOP will be limited as the majority of disturbed areas will either be required for ongoing operations or have been subject to rehabilitation activities already'.</p> <p>The site inspection confirmed rehabilitation is generally progressing well. It is recommended that WQ review the performance of cover on relatively small bare areas of topsoil stockpiles and rehabilitation areas identified. Re-establishment of grass cover and/or infill plantings should be considered in these areas (see Plate 10 and Plate 11).</p>								
Rehabilitation Management Plan											
31.	<p>The Applicant must prepare a Rehabilitation Management Plan for the project to the satisfaction of RR. This plan must:</p> <p>(a) be prepared by suitably qualified and experienced persons whose appointment has been endorsed by the Secretary;</p> <p>(b) be prepared in consultation with the Department, DPIE - Water, FCNSW, BCD, WaterNSW and Council;</p> <p>(c) be submitted to RR and the Secretary for approval within three months of the determination of Modification 1, unless the Secretary agrees otherwise, and Modification 3, unless the RR agrees otherwise;</p> <p>(d) be prepared in accordance with any relevant RR Guideline;</p> <p>(e) describe how the rehabilitation of the site would achieve the objectives identified in Table 6 and be integrated with the Biodiversity Offset Strategy described in condition 24;</p> <p>(f) include a detailed soil and growing medium balance for the development;</p> <p>(g) include a detailed plan for the reinstatement and review of the proposed rehabilitated woodland areas and fauna habitat, including a protocol for periodic trials to demonstrate that the target vegetation community is being achieved;</p> <p>(h) include detailed performance and completion criteria for evaluating the performance of the rehabilitation of the site, and for triggering remedial action (if necessary);</p> <p>(i) describe the measures to be implemented to ensure compliance with the relevant conditions of this consent, and address all aspects of rehabilitation including closure of the development, final landform (including final voids), final land uses;</p> <p>(j) include procedures for the use of interim stabilisation and temporary vegetation strategies, where reasonable to minimise the area exposed for dust generation;</p> <p>(k) include a program to monitor, independently audit and report on the effectiveness of the measures in paragraph (h) above, and progress against the detailed performance and completion criteria in paragraph (g) above; and</p> <p>(l) build on to the maximum extent practicable and integrate with the other Management Plans required under this consent.</p>	Not compliant	<p>A MOP for the period July 2020 to July 2025 was developed by WQ to address the condition for a Rehabilitation Management Plan.</p> <p>a) Appendix 4 provides a letter dated 28/5/20 from DPIE confirming endorsement of Alex Irwin to complete prepare the MOP</p> <p>b) Section 1.5.2 states the following agencies were emailed on 18/3/20 for review and comment</p> <ul style="list-style-type: none"> - DPIE-RR - LCC - DPIE – Water - WaterNSW - Forestry Corporation NSW - BCD <p>Copies of these emails and correspondence are included in Appendix 5 of the MOP.</p> <p>c) Viewed MOP submission to DPIE-RR dated 29/05/20, outside of the 3 months of approval of MOD3. It is noted that WQ lodged a request to extend the submission date for the MOP based on a delay on public advertisement of MOD3. However this extension was rejected by DPIE-RR.</p> <p>d) Section 1.1.2 states the document has been developed in accordance with the guideline ESG3: Mining Operations Plan (MOP) Guidelines, September 2013.</p> <p>e) Table 4.2 lists the objectives and how these can be achieved, which includes the BOS (see Schedule 3, Condition 24).</p> <p>f) Section 5.4 provides details on the soil and growing medium balance.</p> <p>g) Section 5, 6, 7 and 8 of the MOP provide a detailed plan for the reinstatement and review of the proposed rehabilitated woodland areas and fauna habitat.</p> <p>h) Section 6 of the MOP includes detailed performance and completion criteria for evaluating the performance of the rehabilitation of the site.</p> <p>i) Table 4.1 includes the measures to be implemented to ensure compliance with the conditions relating of this consent</p> <p>j) Section 2.3 and 7.2 includes procedures for the use of interim stabilisation and temporary</p>								

Cond	DA 344-11-2001 Condition	Status	Evidence
			<p>vegetation strategies,</p> <p>k) Section 8 details rehabilitation monitoring. Section 10 outlines the process for reporting on progress against completion criteria.</p> <p>l) Section 3.2 of the MOP refers to the Management plans required under this consent and their implementation.</p> <p>DPIE and EPA inspected the site on 18/12/18 who noted that some of the erosion and sediment controls on site had deteriorated and needed maintenance. DPIE acknowledged that plans are in place for these to be changed out/repared over the Christmas 2018 period (see Schedule 3 Condition 26).</p> <p>The 2018-19 AR included details that representatives from Resources Regulator completed an inspection of the Quarry Site on 12/03/19. Several observations were made with a request to address matters raised with respect to weed management, ongoing sediment and erosion control and remediation of areas of erosion (see Schedule 3 Condition 26).</p>
VISUAL			
32.	The Applicant must implement all reasonable and feasible measures to minimise the visual and off-site lighting impacts of the development to the satisfaction of the Secretary	Compliant	<p>The 2019/20 AR (Appendix 7) notes that the movement of trucks along the northern perimeter of the extraction area was visible as select fill was extracted from this area. The northern and eastern walls of the extraction area were also noted to have been established such that WQ operations are no longer visible. Tubestock establishment and vegetation establishment on the amenity bund has started to reduce visual impacts. (2019-20 AR Appendix 7)</p> <p>DPIE and EPA conducted a site visit on 18/12/18 and WQ received email correspondence from DPIE stating EPA had raised the visual screen on the bund with DPIE, due to the clearing that had been undertaken around the quarry it is quite visible from the Great Western Highway with DPIE encouraged the Quarry to implement any reasonable and feasible measures to promote growth. (Section 11.2 of the 2018-19 AR)</p> <p>No complaints during the audit period regarding lighting or visual impacts. No comments from DPIE over the reporting on visual bunds during the audit period in the ARs.</p> <p>The audit site inspection found that direct views to the site were generally screened from motorists on the Great Western Highway due to the visual bund (see Schedule 3, Condition 33 below) and the relative height of active operations (see Plate 12). Some limited views of equipment operating at the more highly elevated part of the site are still available at the time of audit.</p>
33.	Prior to utilising the WSEA, the Applicant must construct a visual bund between the north-western boundary of the WSEA and the Great Western Highway, as described in EA (Mod 1). The visual bund must be maintained to the satisfaction of the Secretary.	Compliant	<p>Deemed compliant by 2018 IEA.</p> <p>It is recommended that WQ investigate options to complete infill plantings or establish a cover crop on exposed sections of the visual bund (see Plate 12).</p>
34.	The Applicant must install bunds at strategic locations around the site and plant additional trees along the boundary of the development site to screen, so far as is reasonable and feasible, the development from external viewers, to the satisfaction of the Secretary	Compliant	As per Schedule 3, Condition 33 above.
WASTE			
35.	The Applicant must: (a) manage on-site sewage treatment and disposal in accordance with the requirements of its EPL, and to the satisfaction of the 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 (d) report on waste management and minimisation in the Annual Review, to the satisfaction of the Secretary.	Compliant	<p>Section 2.3.7 of the MOP describes waste management and includes the following categories:</p> <ul style="list-style-type: none"> - General waste (including food scraps) – covered bin or skip - General recyclables – covered bin or skip - Waste oils and greases – placed within bunded tanks in workshop area - Batteries – placed within a covered and marked used battery storage area - Tyres – placed within a marked used tyres storage area - Scrap metal – stored in a specific area in the workshop <p>a) All wastewater generated via the effluent and ablutions system is collected and disposed of off-site by a licenced contractor. (S6.10 of AR). Viewed examples of receipts in 2018 - 2021 from liquid waste contractors Williams Liquid Waste Services and Cleanaway during the audit period. AI (pers</p>

Cond	DA 344-11-2001 Condition	Status	Evidence
			<p>comm) confirmed no waste issues had been raised by EPA or LCC during the audit period.</p> <p>b) Site inspection confirmed segregated waste bins were available on site to manage waste streams (see Plate 13).</p> <p>c) General waste placed within skip bins that are serviced monthly by a licenced waste contractor. TH (pers comm) confirmed liquid wastes, principally waste hydrocarbons generated during equipment servicing, are removed by a licenced oil waste contractor when their storage container reaches capacity.</p> <p>d) Waste management on site is described in Section 6.10 of the audit period ARs.</p>
36.	Except as expressly permitted in an EPL, specific resource recovery order or exemption under the Protection of the Environment Operations (Waste) Regulation 2014 , the Applicant must not receive waste at the site for storage, treatment, processing, reprocessing or disposal.	Compliant	<p>EPL 13172 (variation last dated 16/11/20) condition L3 states the licensee must not cause, permit or allow any waste to be received at the premises, except wastes that are classified as "General or Specific exempted waste" under Clause 51A of the Protection of the Environment Operations (Waste) Regulation 2005.</p> <p>2018-2019 AR – Section 6.10 describes waste and does not identify any waste was received on site.</p> <p>2019-2020 AR – Section 6.10 describes waste and does not identify any waste was received on site.</p> <p>IA pers comm no waste was received on site in 20/21 period.</p>
LIQUID STORAGE			
37.	The Applicant must ensure that all tanks and similar storage facilities (other than for water) are protected by appropriate bunding or other containment, in accordance with the relevant Australian Standards.	Not compliant	<p>Table 2.3 of the MOP states waste oils and greases would be placed within bunded tank(s) within the workshop area. Where required, smaller, temporary storage containers may be positioned close to work areas, with the contents of those containers transferred to a larger storage tank prior to collection by a licenced contractor. Some housekeeping issues with waste oil drums and other containers being stored outside of bunded pallets were observed during the audit site inspection (see Plate 14). It is recommended that WQ put additional containment measures in place to ensure these containers are appropriately stored when not in active use, in accordance with AS1940.</p> <p>Audit site inspection confirmed the main bulk diesel tank on site is self-bunded to Australian Standards (sighted Fuelfix T55 tank specifications provided by PH) (see Plate 15).</p>
DANGEROUS GOODS			
38.	<p>The Applicant must ensure that the storage, handling and transport of:</p> <p>(a) dangerous goods are done in accordance with the relevant Australian Standards, particularly AS1940 and AS1596, and the Dangerous Goods Code; and</p> <p>(b) explosives are managed in accordance with the requirements of the RR.</p>	Compliant	<p>a) TH (pers comm) confirmed that diesel is the only bulk hazardous material stored on site. This was verified during the site inspection, which found that volumes of other oils are generally stored on pallets within a portable container (see Plate 16). Spill kits were also found to be available in the refuelling and laydown areas to respond to hydrocarbon spills (see Plate 17).</p> <p>b) This condition was added on the approval of MOD 3 in February 2020. Explosives are imported to the Quarry Site on the day of the blast by the blasting contractor (2019-20 AR). AI (pers comm) confirmed this was still WQ site practice.</p>
BUSHFIRE			
39.	The Applicant must: (a) ensure that the development is suitably equipped to respond to any fires on site; and (b) assist the Rural Fire Service and emergency services to the extent practicable if there is a fire in the vicinity of the site.	Compliant	<p>The Bushfire Management Plan (approved by DPIE letter dated 19/08/20) includes:</p> <p>a) Section 4.1 provides measures to reduce any risk of bushfires on or surrounding the Quarry; and Section 4.2.1 provides measures undertaken at the Quarry to ensure appropriate management of active or bushfires in the local area</p> <p>b) Section 4.3 states Walker Quarries will assist emergency services to the extent practicable if there is a fire in the vicinity of the Quarry. During the site inspection, it was noted that a watercart was in operation, and adequate water storage and pumping plant was available for initial response to a bushfire event on site (see Plate 18).</p>
40.	The Applicant must prepare a Bushfire Management Plan for the site, in consultation with FCNSW, to the satisfaction	Compliant	The Bushfire Management Plan (Aug 2020) received feedback from the NSW RFS after initial drafting of the

Cond	DA 344-11-2001 Condition	Status	Evidence
	of the Rural Fire Service.		document in 2017. Email from NSW RFS dated 29 Nov 2017 states they do not endorse bushfire management plans (Appendix 1). Correspondence from DPIE dated 18 December 2017 confirm that WQ had developed the Bushfire Management Plan in consultation with NSW RFS and although no endorsement can be obtained, the condition has been satisfied. Viewed letter dated 08/04/20 from FCNSW confirming they are satisfied with the updated document (Appendix 1).
SCHEDULE 4 ADDITIONAL PROCEDURES			
NOTIFICATION OF LANDOWNERS			
1.	As soon as practicable, and no longer than 7 days, after obtaining monitoring results showing: (a) an exceedance of any criteria in Schedule 3, the Applicant must notify the affected landowners in writing of the exceedance, and provide regular monitoring results, at least every 3 months, to each affected landowner until the development is again complying with the relevant criteria; and (b) an exceedance of any air quality criteria in Schedule 3, the Applicant must send a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time) to the affected landowners and current tenants of the land (including the tenants of land which is not privately-owned).	Compliant	One exceedance of noise criteria occurred during audit period (see Schedule 3, Condition 3). No blasting exceedances of criteria during audit period (see Schedule 3, Condition 10). One exceedance of air quality criteria in January 2020 for deposited dust. AI (pers comm) noted that this elevated result was attributed to regional bushfires and deemed an extraordinary event by WQ. As such, this event was not reported to surrounding landholders (see Schedule 3, Condition 14).
INDEPENDENT REVIEW			
2.	If an owner of privately-owned land considers the development to be exceeding the relevant criteria in Schedule 3, then he/she may ask the Secretary in writing for an independent review of the impacts of the development on his/her land. If the Secretary is satisfied that an independent review is warranted, then within 2 months of the Secretary's decision, the Applicant must: (a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Secretary, to: <ul style="list-style-type: none"> • consult with the landowner to determine his/her concerns; • conduct monitoring to determine whether the development is complying with the relevant criteria in Schedule 3; and • if the development is not complying with these criteria, then identify measures that could be implemented to ensure compliance with the relevant criteria; and (b) give the Secretary and landowner a copy of the independent review; and (c) comply with any written requests made by the Secretary to implement any findings of the review.	Not triggered	No request from any privately owned land during the audit period (AI per comms.).
VISUAL IMPACT MITIGATION			
3.	If an owner of privately-owned land considers that the visual impacts of the development at his/her land could be minimised, then he/she may ask the Secretary in writing for a review of the visual impacts of the development on his/her land. If the Secretary is satisfied that a review is warranted, then within 2 months of the Secretary's decision, the Applicant must: (a) commission a suitably qualified and experienced person, whose appointment has been approved by the Secretary, to: <ul style="list-style-type: none"> • consult with the landowner to determine his/her concerns; • investigate ways to minimise the visual impacts of the development on land; and • prepare a visual mitigation report detailing the outcomes of the investigation and the proposed mitigation measures. (b) give the Secretary and landowner a copy of the review; and	Not triggered	No request from any privately owned land during the audit period. No record of complaints about visual impacts during the audit period (AI pers comm).

Cond	DA 344-11-2001 Condition	Status	Evidence
	(c) comply with any written requests made by the Secretary to implement any findings of the review.		
SCHEDULE 5 ENVIRONMENTAL MANAGEMENT, AUDITING AND REPORTING			
ENVIRONMENTAL MANAGEMENT			
Environmental Management Strategy			
1.	<p>The Applicant must prepare an Environmental Management Strategy for the development to the satisfaction of the Secretary. This strategy must:</p> <ul style="list-style-type: none"> (a) be submitted to the Secretary for approval prior to the commencement of any development on the site; (b) provide the strategic framework for environmental management of the project; (c) identify the statutory approvals that apply to the project; (d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project; (e) describe the procedures that would be implemented to: <ul style="list-style-type: none"> • keep the local community and relevant agencies informed about the operation and • environmental performance of the project; • receive, handle, respond to, and record complaints; • resolve any disputes that may arise; • respond to any non-compliance; • respond to emergencies; and (f) include: <ul style="list-style-type: none"> • copies of any strategies, plans and programs approved under the conditions of this approval; and • a clear plan depicting all the monitoring to be carried out in relation to the project. <p>The Applicant must implement any Environmental Management Strategy as approved from time to time by the Secretary.</p>	Compliant	<p>Wallerawang Quarry operates under the Environmental Management Strategy (21/08/20) approved by the Secretary in letter dated 21/08/20.</p> <p>Recommend including the approval letter as an Appendix to future versions of the EMS.</p> <ul style="list-style-type: none"> a) 2018 IEA viewed letter from DPIE approved the initial EMS dated 30/1/18. b) Section 3 provides the strategic framework for environmental management. c) Section 5 lists out all the statutory approvals that apply to the development. d) Section 4 describes the roles, responsibilities and accountability of key personnel. e) Includes: <ul style="list-style-type: none"> • keep the local community and relevant agencies informed about the operation (Section 7.1) • environmental performance of the project (Section 6) • receive, handle, respond to, and record complaints (Section 7.2) • resolve any disputes that may arise (Section 7.2.2) • respond to any non-compliance (Section 7.3.3) • respond to emergencies (Section 7.6) f) Section 6.2 lists out the copies of strategies and plans approved under this approval and are available on the Company website. Appendix 2 shows a clear plan showing all monitoring on site. <p>A review of site records and discussions with WQ staff during the site inspection found that the EMS was generally being implemented, as approved.</p>
Evidence of Consultation			
2.	<p>Where conditions of this consent require consultation with an identified party, the Applicant must:</p> <ul style="list-style-type: none"> (a) consult with the relevant party prior to submitting the subject document; and (b) provide details of the consultation undertaken including: <ul style="list-style-type: none"> (i) the outcome of that consultation, matters resolved and unresolved; and 	Compliant	<p>Management plans requiring consultation have had all relevant correspondence with regulatory agencies and other stakeholders included as an Appendix (see conditions for specific management plans above).</p> <p>A summary table of how comments were addressed by WQ was also included in the Appendix clarifying the outcomes of consultation and anything unresolved.</p>

Cond	DA 344-11-2001 Condition	Status	Evidence
	(ii) details of any disagreement remaining between the party consulted and the Applicant and how the Applicant has addressed the matters not resolved.		
Management Plan Requirements			
3.	<p>Management plans required under this consent must be prepared in accordance with relevant guidelines, and include:</p> <p>(a) a summary of relevant background or baseline data;</p> <p>(b) details of:</p> <ul style="list-style-type: none"> (i) the relevant statutory requirements (including any relevant approval, licence or lease conditions); (ii) any relevant limits or performance measures and criteria; and (iii) the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures; <p>(c) any relevant commitments or recommendations identified in the document/s listed in condition 2(c) of Schedule 2;</p> <p>(d) a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria;</p> <p>(e) a program to monitor and report on the:</p> <ul style="list-style-type: none"> (i) impacts and environmental performance of the development; and (ii) effectiveness of the management measures set out pursuant to condition 2(c) of Schedule 2; <p>(f) contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;</p> <p>(g) a program to investigate and implement ways to improve the environmental performance of the development over time;</p> <p>(h) a protocol for managing and reporting any:</p> <ul style="list-style-type: none"> (i) incident, non-compliance or exceedance of the impact assessment criteria or performance criteria; (ii) complaint; or (iii) failure to comply with statutory requirements; <p>(i) public sources of information and data to assist stakeholders in understanding environmental impacts of the development; and</p> <p>(j) a protocol for periodic review of the plan.</p> <p><i>Note: The Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.</i></p>	Compliant	Versions of environmental management plans in place at the time of audit include the required information.
3A.	The Applicant must ensure that management plans prepared for the development are consistent with the conditions of this consent and any EPL issued for the site.	Compliant	The management plans included all relevant SSD and EPL conditions in the statutory requirement sections.
Application of Existing Management Plans			
4.	The Applicant must continue to apply existing approved management plans, strategies or monitoring programs that have most recently been approved under this consent, until the approval of a similar plan, strategy or program under this consent.	Compliant	Noted.
Revision of Strategies, Plans & Programs			
5.	<p>Within 3 months of the submission of an:</p> <ul style="list-style-type: none"> (a) incident report under condition 9 below; (b) Annual Review under condition 11 below; (c) audit report under condition 14 below; and 	Not compliant	<p>a)</p> <ul style="list-style-type: none"> b) No environmental incidents were reported during the audit period. c) <u>Evidence was not available to verify WQ review of plans strategies and programs following submission of relevant AR documents and the 2018 IEA.</u> d) See Schedule 4, Condition 5(b) above. e) Excepting the Rehabilitation Management Plan (MOP) (submitted 3 days late after a request for an

Cond	DA 344-11-2001 Condition	Status	Evidence
	<p>(d) any modifications to this consent, the Applicant must review the strategies, plans and programs required under this consent, to the satisfaction of the Secretary. The applicant must notify the Department in writing of any such review being undertaken. Where this review leads to revisions in any such document, then within 6 weeks of the review the revised document must be submitted for the approval of the Secretary.</p> <p><i>Note: The purpose of this condition is to ensure that strategies, plans and programs are regularly updated to incorporate any measures recommended to improve environmental performance of the development.</i></p>		<p>extension request was denied by DPIE-RR), and all required management plans and strategies were submitted within three months of MOD 3 (Appendix 7 2020 AR). WQ also noted that it only notified of the approval of MOD 3 on 6 March 2020 (9 days after the modification was granted).</p> <p>It is recommended that WQ consider adding a column providing the purpose of review/update to management plan document control tables to address this condition. It is also recommended that notification is provided to DPIE on submission of each AR that confirms any management plans scheduled to be revised by WQ.</p>
Updating and Staging Strategies, Plans or Programs			
6.	<p>With the approval of the Secretary, the Applicant may:</p> <p>(a) prepare and submit any strategy, plan or program required by this consent on a staged basis (if a clear description is provided as to the specific stage and scope of the development to which the strategy, plan or program applies, the relationship of the stage to any future stages and the trigger for updating the strategy, plan or program);</p> <p>(b) combine any strategy, plan or program required by this consent (if a clear relationship is demonstrated between the strategies, plans or programs that are proposed to be combined); and</p> <p>(c) update any strategy, plan or program required by this consent (to ensure the strategies, plans and programs required under the consent are updated on a regular basis and incorporate additional measures or amendments to improve the environmental performance of the development).</p>	Not Triggered	Not Triggered (AI per comm).
6A.	If the Secretary agrees, a strategy, plan or program may be staged without addressing particular requirements of the relevant condition of this consent if those requirements are not applicable to a particular stage.	Not Triggered	Not Triggered (IA per comm)
6B.	If the Secretary agrees, a strategy, plan or program may be staged or updated without consultation being undertaken with all parties required to be consulted in the relevant condition in this consent.	Not Triggered	Not Triggered (IA per comm)
Adaptive Management			
7.	<p>The Applicant must assess and manage development-related risks to ensure that there are no exceedances of the criteria and/or performance measures in Schedule 3. Any exceedance of these criteria and/or performance measures constitutes a breach of this consent and may be subject to penalty or offence provisions under the EP&A Act or EP&A Regulation.</p> <p>Where any exceedance of these criteria and/or performance measures has occurred, the Applicant must as soon as becoming aware of any exceedance:</p> <p>(a) take all reasonable and feasible steps to ensure that the exceedance ceases and does not reoccur;</p> <p>(b) consider all reasonable and feasible options for remediation (where relevant);</p> <p>(c) within 14 days of the exceedance occurring, submit a report to the Secretary describing these remediation options and any preferred remediation measures or other course of action; and</p> <p>(d) implement remediation measures as directed by the Secretary;</p> <p>to the satisfaction of the Secretary</p>	Not Triggered	Not Triggered (IA per comm)
Community Consultative Committee			
8.	<p>The Applicant must establish and operate a Community Consultative Committee (CCC) for the development to the satisfaction of the Secretary. The CCC must be operated in general accordance with the Department's Community Consultative Committee Guidelines, 2019 (or later version).</p> <p><i>Notes:</i></p> <ul style="list-style-type: none"> The CCC is an advisory committee. The Department and other relevant agencies are responsible for ensuring that the Applicant complies with this consent. In accordance with the guidelines, the Committee should comprise an independent chair and appropriate representation from the Applicant, Council and the local community. 	Not compliant	<p>Section 1.5.1 of the MOP states that the CCC meet twice annually.</p> <p>The CCC met on the following occasions during the audit period:</p> <ul style="list-style-type: none"> 10 April 2018 8 November 2018 5 June 2019 13 November 2019 4 August 2020

Cond	DA 344-11-2001 Condition	Status	Evidence
			- 1 December 2020 The CCC has included an independent chair and a member of the Lithgow Council as per DPIE guidelines. All meeting minutes during the audit period were available on the WQ website. The 2018-2019 AR noted a non-compliance as at the time of publishing the AR, the meeting minutes from 5 June 2019 meeting was not available on the Company website. This has since been rectified and all minutes are currently up to date on the Company website. Recommend that CCC minutes continue to be uploaded to the WQ website following their distribution to the CCC representatives.
REPORTING			
Incident Reporting			
9.	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.	Not triggered	Section 11.1 of the audit period ARs confirm no environmental incidents during the period 2018 – 2020. AI (pers comm) no incidents since September 2020.
Non-Compliance Reporting			
10.	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. <i>Note: A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.</i>	Not triggered.	No incidents and non-compliances were recorded during the audit period.
Annual Review			
11.	By the end of September in each year after the commencement of development, or other timeframe agreed by the Secretary, a report must be submitted to the Department reviewing the environmental performance of the development, to the satisfaction of the Secretary. This review must:	Compliant	Viewed WQ correspondence submitting audit period ARs to DPIE.
	(a) describe the development (including any progressive rehabilitation) that was carried out in the previous financial year, and the development that is proposed to be carried out over the current financial year;		2018/19 and 2019/20 ARs- Section 4 describes the development that was carried out in the past calendar year and that is proposed to be carried out over the current calendar year.
	(b) include a comprehensive review of the monitoring results and complaints records of the development over the previous financial 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 in condition 2(c) of Schedule 2;		2018/19 and 2019/20 ARs-Sections 6 & 7 provide details on monitoring data for the reporting period.
	(c) identify any non-compliance or incident which occurred in the previous financial year, and describe what actions were (or are being) taken to rectify the non-compliance and avoid reoccurrence;		2018/19 and 2019/20 ARs- Section 11 identifies non-compliance over past calendar year, and describes action to be taken to ensure compliance
	(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;		2018/19 and 2019/20 ARs- Sections 6.4 (Air Quality) and 6.5 (Noise) describes compliance and effectiveness of the management system
	(e) identify any trends in the monitoring data over the life of the development;		2018/19 and 2019/20 ARs-Section 6.4.3 (Air Quality) , 6.4.3 (Blasting), 6.5.3 (Noise) and 7.3.3 (Water) describes any trends over the life of the site
	(f) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and		2018/19 and 2019/20 ARs- Comparison of actual Project impacts to predictions are found within the Annual Reviews broken up into individual environmental impacts (air quality, noise, blasting, surface water,

Cond	DA 344-11-2001 Condition	Status	Evidence
			groundwater) and rehabilitation objectives are compared with the MOP predictions.
	(g) describe what measures will be implemented over the next financial year to improve the environmental performance of the development.		2018/19 and 2019/20 ARs- Section 12 contains measures for the next reporting year
12.	Copies of the Annual Review must be submitted to Council and made available to the CCC and any interested person upon request.	Not compliant	Unable to verify that a copy of the 2018-19 and 2019-20 AR documents were provided to Lithgow City Council. Annual reviews are available on the company website.
INDEPENDENT ENVIRONMENTAL AUDIT			
13.	Prior to the end of June 2021, and every three years after, unless the 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 Secretary (b) be conducted by a suitably qualified, experienced and independent team of experts (including any expert in field/s specified by the Secretary) whose appointment has been endorsed by the Secretary; (c) be carried out in consultation with the relevant agencies and 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 Secretary.	Compliant	The current IEA satisfies these requirements. The audit period is from 13 April 2018 to 27 April 2021. DW certification satisfies requirements for Environmental Management Systems Auditor. Letter from DPIE re Endorsement of the Independent Environmental Auditor dated 22/04/21. Consultation with relevant agencies shown in Appendix C.
14.	Within 12 weeks of commencing this audit, or as otherwise agreed by the Secretary, the Applicant must submit a copy of the audit report to the 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 these recommendations as required. The Applicant must implement these recommendations, to the satisfaction of the Secretary.	Compliant	The 2018 IEA commenced 12 April 2018 (2018 IEA Action Plan). Viewed email submitting the 2018 IEA report and Action Plan to DPIE dated 05/07/18, within the 12-week timeframe required under this condition. A response to audit recommendations was provided as an Appendix to the 2018/19 AR.
Monitoring and Environmental Audits			
15.	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 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.	-	Noted
16.	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.	Compliant	Blast MP Section 7.2 allows for monitoring to be undertaken on any property within a 2km radius from the blast subject to requests and permissions from the landholder. Noise MP Section 7.2 provides details on why each location has been chosen and its suitability. It also allows for in instance the current monitoring locations are unavailable the closest possible locations will be chosen.
ACCESS TO INFORMATION			
17.	Within 6 months of the date of this consent until the completion of all rehabilitation required under this consent, the Applicant must:	Not compliant	WQ website was reviewed by JBA on 21/04/21. A copy of the environmental assessments prepared for the EIS and three modifications are available.

Cond	DA 344-11-2001 Condition	Status	Evidence
	<p>(a) make the following information and documents (as they are obtained, approved or as otherwise stipulated within the conditions of this consent) publicly available on its website:</p> <ul style="list-style-type: none"> (i) the document/s listed in condition 2(c) of Schedule 2; (ii) all current statutory approvals for the development; (iii) all approved strategies, plans and programs required under the conditions of this consent; (iv) the proposed staging plans for the development if the construction, operation or decommissioning of the development if it is to be staged; (v) minutes of CCC meetings; (vi) regular reporting on the environmental performance of the development in accordance with the reporting requirements in any plans or programs approved under the conditions of this consent; (vii) a comprehensive summary of the monitoring results of the development, reported in accordance with the specifications in any conditions of this consent, or any approved plans and programs; (viii) a summary of the current progress of the development; (ix) contact details to enquire about the development or to make a complaint; (x) a complaints register, updated monthly; (xi) the Annual Reviews of the development; (xii) audit reports prepared as part of any Independent Environmental Audit of the development and the Applicant's response to the recommendations in any audit report; (xiii) any other matters required by the Secretary; and <p>(b) keep such information up to date, to the satisfaction of the Secretary.</p>		<p>Environmental Assessment documentation listed in Schedule 2, Condition 2(c) is not available on the WQ website. Recommend updating the link to the current DPIE major projects database for access to approvals documentation from the WQ website. All other publicly required documentation and monitoring data is available on the website.</p>
APPENDIX 3 INCIDENT NOTIFICATION AND REPORTING REQUIREMENTS			
Written Incident Notification Requirements			
1.	<p>A written incident notification addressing the requirements set out below must be emailed to the Department at the following address: compliance@planning.nsw.gov.au within seven days after the Applicant becomes aware of an incident. Notification is required to be given under this condition even if the Applicant fails to give the notification required under condition 9 of Schedule 5 or, having given such notification, subsequently forms the view that an incident has not occurred.</p>	Not Triggered	AI (pers comm) confirmed no incidents occurred during the audit period,
2.	<p>Written notification of an incident must:</p> <ul style="list-style-type: none"> (a) identify the development and application number, (b) provide details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident); (c) identify how the incident was detected; (d) identify when the Applicant became aware of the incident; (e) identify any actual or potential non-compliance with the conditions of this consent; (f) describe what immediate steps were taken in relation to the incident; (g) identify further action(s) that will be taken in relation to the incident; and (h) identify a project contact for further communication regarding the incident. 	Not Triggered	As per Appendix 3, Condition 1 above.
3.	<p>Within 30 days of the date on which the incident occurred or as otherwise agreed to by the Secretary, the Applicant must provide the Secretary and any relevant public authorities (as determined by the Secretary) with a detailed report on the incident addressing all requirements below, and such further reports as may be requested.</p>	Not Triggered	As per Appendix 3, Condition 1 above.
4.	<p>The Incident Report must include:</p> <ul style="list-style-type: none"> (a) a summary of the incident; 	Not Triggered	As per Appendix 3, Condition 1 above.

Cond	DA 344-11-2001 Condition	Status	Evidence
	(b) outcomes of an incident investigation, including identification of the cause of the incident; (c) details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence; and (d) details of any communication with other stakeholders regarding the incident.		

Table B
Development Approval 019/18 Conditions

Cond	DA 019/18 Condition	2021 Status	2021 Evidence
SCHEDULE A			
Conditions of Consent (Consent Authority) Please Note: It should be understood that this consent in no way relieves the owner or applicant from any obligation under any covenant affecting the land			
Administrative Conditions			
1.	That the development be carried out in accordance with the application, Statement of Environmental Affects, accompanying information, plans listed in the approval and any further information provided during the process unless otherwise amended by the following conditions.	Compliant	Reviewed Occupation Certificate (see Schedule 2, Condition 8 of DA 344-11-2001 in Table A) and viewed offices as constructed (see Plate 19). Review during the site inspection confirmed that the offices were constructed generally in accordance with the plans provided on the design and certification documents.
2.	That the development be carried out in accordance with the application, Statement of Environmental Affects, accompanying information, plans listed in the approval and any further information provided during the process unless otherwise amended by the following conditions.	Compliant	As Condition 1 above
3	That minimal disturbance is caused to the site during construction works and any disturbed areas are to be generally made good and revegetated to the satisfaction of Council prior to the issue of the Occupation Certificate. Any excavated and filled areas are graded and drained and all constructed batters are to be topsoiled, turfed and shall comply with Part 3.1.1, Building Code of Australia, Volume 2, 2016. batters exceeding a ratio of 3 horizontal to 1 vertical must be retained with retaining walls prior to occupation.	Compliant	As Condition 1 above
Requirements Prior			
4	A Construction certificate to complete the buildings is required prior to the carrying out of any further building works. This certificate can be issued either by Council as the consent authority or by an accredited certifier.	Compliant	Deemed compliant by 2018 IEA
5	Prior to commencing any construction works, the following provisions of the Environmental Planning and Assessment Act 1979 are to be complied with: a) a Construction Certificate is to be obtained in accordance with section 81A(2)(b) of the Act, and b) a Principal Certifying Authority is to be appointed and council is to be notified of the appointment in accordance with Section 81A(2)(b) of the Act and Form 7 of the regulations, and c) Council is to be notified as least two days prior of the intention to commence building works, in accordance with Section 81A(2)(c) of the Act in Form 7 of Schedule 1 of the Regulations.	Compliant	Deemed compliant by 2018 IEA
Sedimentation			
6	To contain soil and sediment on the property, controls are to be implemented prior to clearing of the site vegetation and the commencement of site works. This will include: a) The installation of a sediment fence with returned ends across the low side of the site so that all water flows through. These shall be maintained until all disturbed areas are restored by turfing paving, revegetation.	Compliant	Construction completed prior to the time of audit. No evidence of erosions and sedimentation issues were observed during the audit site inspection.
Dust Minimisation			
7	Measures shall be implemented to minimise wild erosion and dust nuisance in accordance with the requirements of the manual "Soils and Construction" (2004) (Bluebook).	Not verified	Construction completed prior to the time of audit.
Signage			
8	Prior to the commencement of any works on the land, a sign/s must be erected in a prominent position on the site: a. Showing the name of the principal contractor (if any) for any building work and a telephone number on which that person can be contacted outside working hours. b. Stating that unauthorised entry to the work site is prohibited and	Not verified	Construction completed prior to the time of audit.

	c. Showing the name, address and telephone number of the principle certifying authority for the work. The sign/s are to be maintained while the building work, subdivision work or demolition work is being carried out, but must be removed when the work has been completed.		
REQUIREMENTS DURING CONSTRUCTION			
Workers Toilet Facilities			
9	Before work starts, toilet facilities must be provided at the work site before works begin and must be maintained until the works are completed at a ratio of one toilet plus one additional toilet for every 20 persons employed at the site.	Not verified	Construction completed prior to the time of audit.
Waste Disposal			
10	Prior to any building works commencing a suitable Waste Container for the deposit of all building rubbish and litter must be provided and emptied as soon as full at a waste management facility. Building rubbish and litter must be provided and emptied as soon as full at a waste management facility. Building rubbish and litter must be contained on the building site and the work site left clear of waste and debris at the completion of the works.	Not verified	Construction completed prior to the time of audit.
Construction Hours			
11	All work on site shall only occur between the following hours: Monday to Friday : 7:00am to 6:00pm Saturday : 8:00am to 1:00pm Sunday and public holidays : No work	Not verified	Construction completed prior to the time of audit.
Excavations			
12	All excavations and backfilling associated with the approved works must be executed safely and in accordance with appropriate professional standards. All excavations must be properly guarded and protected to prevent them from being dangerous to life or property.	Not verified	Construction completed prior to the time of audit.
PRIOR TO THE ISSUE OF AN OCCUPATION CERTIFICATE			
Occupation Certificate			
13	Prior to the use/occupation of the structure an Occupation Certificate must be issued by the principal Certifying Authority.	Compliant	Viewed Occupation Certificate (see Schedule 2, Condition 8 of DA 344-11-2001 in Table A).
14	The demountable office buildings shall only be used by the existing staff of the Wallerawang Quarry. No additional staff are to be employed as a result of this development consent.	Compliant	PH (pers comm) confirmed staffing numbers on site are generally consistent with the EIS).
15	The existing sanitary facilities in the existing office building shall be available for use by the occupants of the demountable buildings.	Compliant	Confirmed during audit site inspection.
16	A structural engineer's certificate of adequacy for the demountable buildings shall be submitted to council prior to the issue of an occupation certificate.	Compliant	Viewed Occupation Certificate (see Schedule 2, Condition 8 of DA 344-11-2001 in Table A).
ADVISORY NOTES			
Building Code of Australia Compliance			
AN1	All building work must be carried out in accordance with the provisions of the Building Code of Australia.	Compliant	Viewed Occupation Certificate (see Schedule 2, Condition 8 of DA 344-11-2001 in Table A).
Inspection Schedule			
Mandatory Building Inspection Schedule			
AN2	To ensure structural integrity, the maintenance of minimum health standards, the management of the buildings surrounds and the protection of the environment, compliance certificates are to be issued at significant stages throughout the construction period. These stages are: a) pier holes/pad footings before filling with concrete	Compliant	Viewed notice of appointment of principal certifier BBAC Certifiers dated 29/05/18, and final inspection reports from the project stages identified under this condition.

	<p>a) Reinforcing steel in position and before concrete is poured (slab, footings, lintels, beams, columns, floors, walls and the like)</p> <p>b) Framing when external wall and roof cladding is in place and prior to internal linings.</p> <p>c) Wet area flashing prior to tiling or covering.</p> <p>d) Stormwater drainage between building and discharge point (drainage pipes, soakage pits and the like) prior to covering.</p> <p>e) Completion of the development and sign off to all conditions of the consent including landscaping, prior to occupation and use. At each inspection, erosion and sediment control measures and site management will be inspected.</p> <p>Note: fortyeight (48) hours notice shall be given to Council prior to inspections.</p>		
AN3	<p>Access and facilities for people with a disability must comply with Part D3 and Clause F2.4 of the Building Code of Australia (volume 1) and AS122.1. In this regard, plans to indicate the provision of an accessible car parking space and an accessible sanitary facility should be submitted with the Construction Certificate (CC) Application.</p>	Compliant	Viewed during site visit and confirmed disability access is in place.
AN4	<p>A Section J Energy Efficiency Report from a suitably qualified person should be submitted with the Construction Certificate (CC) Application.</p>	Compliant	Deemed compliant by 2018 IEA.

Table C
Other Licences & Approvals

Instrument	Status	Comments
ML 1633	Compliant	<p>1) Viewed letters from Walker Quarries dated 20/08/18 providing notification to relevant landholders of the ML 1633 renewal application. Letters were provided to State Forests NSW, Crown Lands NSW and Sitegoal Pty Ltd.</p> <p>2) See response to Schedule 3, Conditions 29, 30 and 31 of DA 344-11-2001 (refer Table A).</p> <p>3) See response to Schedule 3, Conditions 30, 31 of DA 344-11-2001 (refer Table A).</p> <p>4) See response to Schedule 5, Condition 10 of DA 344-11-2001 (refer Table A).</p> <p>5) See response to Schedule 5, Condition 9 DA 344-11-2001 (refer Table A).</p> <p>6) Operations during the reporting period were undertaken to recover maximum mineral resources, progression of mine plan in accordance with MOP, MOD3 SEE (PH, per comms). The site inspection found that operations during the audit period were progressing generally in accordance the EIS and MOD3 SEE.</p> <p>7) Sighted 'Deed of Security Deposit Bond' for ML 1633 executed by the National Australia Bank Limited, as at 09/10/20. The Deed secures funding in accordance with the varied amount requested in Department of Regional NSW correspondence to WQ on 06/08/20.</p> <p>8) No overlapping mining titles held by other parties impacts on ML 1633. Viewed Compensation Agreement (03/07/18) between WQ and the Forestry Corporation (see response to Schedule 2, Condition 17 of DA 344-11-2001 (refer Table A)).</p> <p>Note: Exploration reporting lodged for 2018, 2019 and 2020 was viewed during the audit site inspection.</p> <p>9) Not Triggered. Viewed the Wallerawang Dam Notification Area figure prepared by CEH Survey, dated 24/10/19. No disturbance has occurred within this area (AI per comms).</p>
EL4473	Compliant	<p>1) Exploration work carried out during the 2018 – 2019 reporting period comprised a thorough review and compilation of previous exploration reports and historic geological information relating to EL 4473. Geological reconnaissance along the southern boundary of ML 1633 and into EL 4473 was also undertaken to determine suitable locations for the drilling of water monitoring bores for the Wallerawang Quarry. This reconnaissance work was focussed on finding evidence of fracturing in rock outcrops along an interpreted fault line trending from drill holes WQDD002 and WQDD003 in ML 1633 southwards into EL 4473.</p> <p>Exploration work carried out during the 2019 – 2020 reporting period was focussed on administrative requirements but also included landholder liaison and land access negotiations with Forestry Corporation of NSW.</p> <p>3) See response Schedule 5, Condition 8 of DA 344-11-2001 (refer Table A). Also Viewed 2017/18, 2018/19 and 2019/20 'Annual Exploration Progress Report' documents prepared during the audit period by Rangott Mineral Exploration Pty Ltd, on behalf of WQ. The reports note that exploration activities were not undertaken during the period, however it is recommended that WQ consider the Code in during consultation required for future activities under EL 4473.</p> <p>4) Not Triggered. AI (pers comm) confirmed no drilling occurred during the reporting period within the EL.</p> <p>5) Viewed WQ payment report confirming that the required EL security payment had been made.</p> <p>6) PH (pers comm) confirmed not triggered.</p> <p>7) Not Triggered</p> <p>8) Viewed 2017/18, 2018/19 and 2019/20 'Annual Exploration Progress Report' documents prepared during the audit period by Rangott Mineral Exploration Pty Ltd, on behalf of WQ. The report documents note distribution to the DPIE-RR EROL system.</p> <p>9) Not Triggered. No change in control of the EL during the reporting period.</p> <p>10) Not Triggered. No change in control of the EL during the reporting period.</p> <p>11) Not Triggered. AI (pers comm) confirmed no drilling occurred during the reporting period within the EL.</p> <p>12) Not Triggered. As per EL 4472 Condition 11 above.</p> <p>13) Not Triggered . As per EL 4472 Condition 11 above.</p> <p>14) AI (pers comm) confirmed that no prospecting occurred in the Sydney Catchment Authority area during the audit period.</p>
WALs	Compliant	<p>AI (pers comm) noted WAL41884 in place but no allocation was sought under that WAL during the audit period.</p> <p>AI (pers comm) noted WAL42081 has been superseded by 100ML GW licence WAL 42390.</p> <p>AI (pers comm) noted no extraction under WAL 42390 from the GW source during the audit period.</p> <p>Approval 10CA123996 for centrifugal pump to extract water from Cox's River. No allocation is held for the work under WAL41884, so monitoring and recording conditions not triggered. PH (pers comm) confirmed no disturbance occurred during the audit period to develop the approved pumping site.</p> <p>Approval 10CA123169 for groundwater bore location. PH (pers comm) confirmed that the bore was not used for water supply during the audit period.</p>

APPENDIX C
PLATES FROM SITE INSPECTION



Plate 1
Wash Plant & loading area



Plate 2
In-pit crushing and screening area plant



Plate 3
Product loading at Main Stockpile Area



Plate 4
Process water tanks located at in-pit screening area



Plate 5
Silt settling cells below Wash Plant



Plate 6
Settling cells adjacent Wash Plant area



Plate 7
Sediment Dam SD2



Plate 8
Example of habitat resources identified in April 2021 pre-clearing surveys



Plate 9
View from refueling area towards WSEA rehabilitation



Plate 10
Bund adjacent site access road requiring rehabilitation cover



Plate 11

Western Stockpile Area access requiring rehabilitation cover maintenance



Plate 12

Site Access Intersection with the Great Western Highway (looking due South)



Plate 13
Example of segregated waste bins located on site



Plate 14
Oil drums located outside of bunded pallet



Plate 15
Bulk diesel storage tank and spill response kit



Plate 16
View of site storage container for maintenance materials



Plate 17
Pumping infrastructure in place adjacent southern sediment dam



Plate 18
Site office extension constructed during the audit period under LCC DA 019/18



Plate 19
View from WQ site office toward wheel wash for trucks leaving site

APPENDIX D
STAKEHOLDER ENGAGEMENT
CORRESPONDENCE



Alex Irwin Principal
Environmental Consultant
Wallerawang Quarry
963 Great Western Highway
Marrangaroo NSW 2790

22/04/2021

Dear Mr Irwin

**Wallerawang Quarry (DA344-11-2001)
Independent Environmental Auditor Endorsement**

I refer to your request (DA344-11-2001-PA-20) for the Planning Secretary's approval of a suitably qualified and experienced auditor to undertake an Independent Environmental Audit for the Wallerawang Quarry (DA344-11-2001).

The Department has reviewed the nomination and information provided and is satisfied that this auditor is suitably qualified and experienced. Consequently, I can advise that the Planning Secretary approves the appointment of Dorian Walsh to undertake the Independent Environmental Audit.

If you wish to discuss this matter further, please contact Wayne Jones on 6575 3406.

Yours sincerely

A handwritten signature in blue ink, appearing to be 'LE', written over a light blue circular stamp.

Lauren Evans
A/Director
Resource Assessments (Coal & Quarries)

As nominee of the Planning Secretary

Dorian Walsh

Subject: Wallerawang Quarry Independent Environmental Audit - consultation

From: Wayne Jones

Sent: Wednesday, 21 April 2021 9:50 AM

To: Dorian Walsh

Cc: Tamie Gray

Subject: RE: Wallerawang Quarry Independent Environmental Audit - consultation

"

[WARNING] This email originated from outside of the organisation.

"

Good day Dorian,

Thank you for your email.

Appreciate if the auditor could assess performance of compliance against the implementation of the mitigation measures documented in approved NMP and AQMP.

Cheers Wayne

Wayne Jones

Team Leader - Post Approval

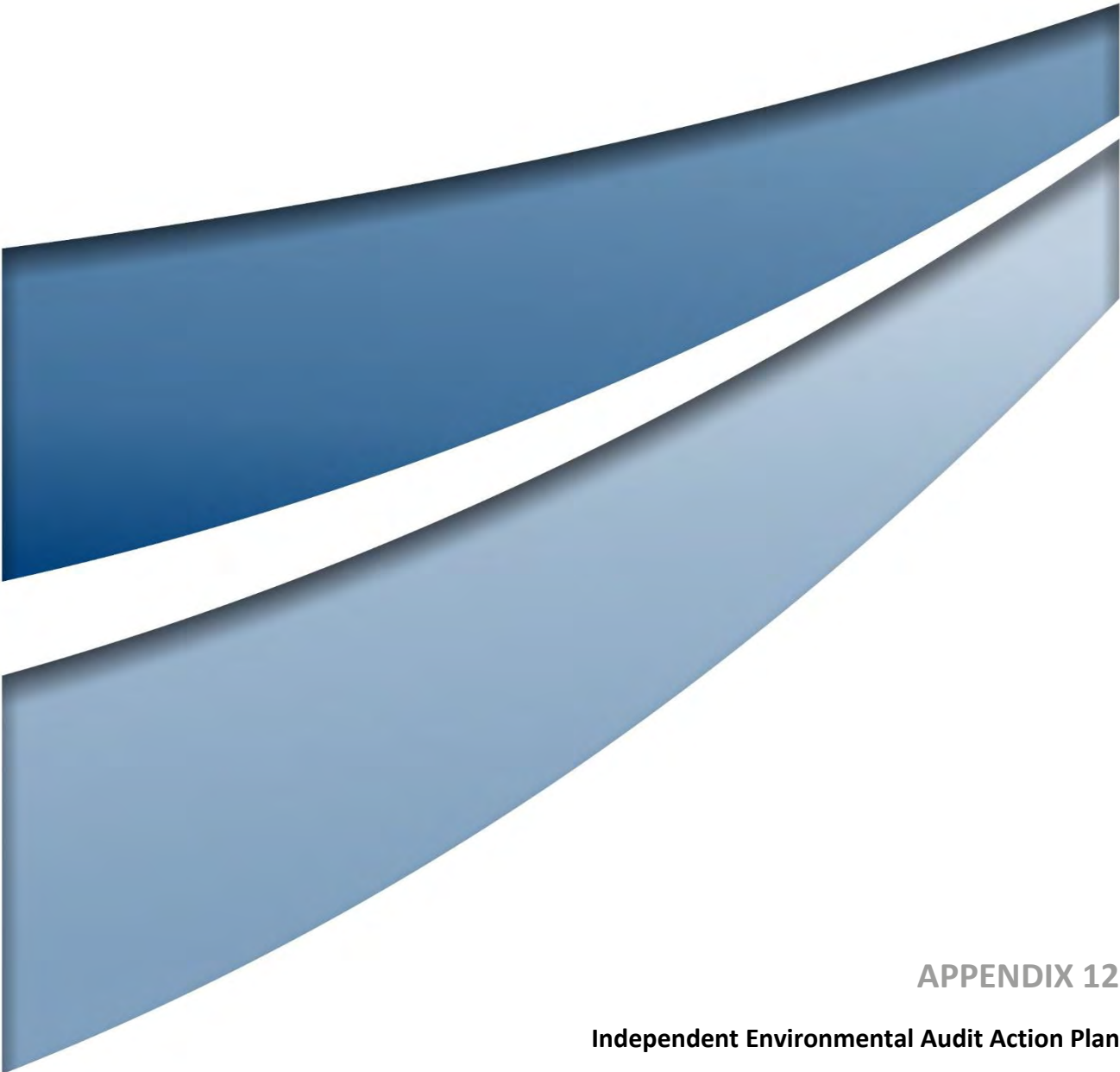
Energy, Industry and Compliance | Planning and Assessment

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APPENDIX 12

Independent Environmental Audit Action Plan

Our Ref: 4433_R21_IEA Review and Response Plan_V1_Final

20 July 2021

Compliance Unit
Department of Planning, Industry & Environment
GPO Box 3145
Singleton NSW 2330
E | wayne.jones@planning.nsw.gov.au

To the relevant officer,

Re: Independent Environmental Audit Review and Response Plan

In accordance with Condition 13 (of Schedule 5)¹ of Development Consent DA 344-11-2001, an Independent Environmental Audit (IEA) was completed for the Wallerawang Quarry operated by Walker Quarries Pty Ltd (Walker Quarries) by James Bailey & Associates Pty Ltd (JBA).

1.0 IEA Completion – Conditional Requirements of DA 344-11-2001

The IEA, which commenced with a site meeting on 27 April 2021, is attached with this correspondence. The IEA considered the conditional requirements of:

- DA 344-11-2001: the development consent for the Wallerawang Quarry issued on 14 October 2004 and subsequently modified three times on 25 August 2017, 7 December 2018 and 26 February 2020,
- The management plans or other documents prepared in compliance with the conditions of DA 344-11-2001,
- DA 019/18: the development consent issued by Lithgow City Council for the construction and use of office and amenity buildings on the Wallerawang Quarry Site,
- Mining lease (ML) 1633,
- Exploration Licences (EL) 4473, and
- various Water Access Licences and Water Approvals held by Walker Quarries.

A summary of the key outcomes of the IEA is provided in **Section 2**.

The IEA includes a number of recommendations and **Section 3** provides the Response Plan of Walker Quarries to these recommendations.

¹ Conditions of DA 344-11-2001 are hereafter referenced as follows Schedule (Condition), i.e. Condition 13 of Schedule 5 will read Condition 5(13).

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2.0 Summary of IEA Outcomes

For each condition or commitment, JBA determined Walker Quarries to be either compliant or non-compliant. Where a requirement has an activation or timing trigger that had not been met at the time of the audit inspection, compliance status was noted as 'not triggered'. Where conditional requirements were addressed or completed prior to this IEA, compliance status was noted as 'not verified'.

The IEA confirmed operations at the Wallerawang Quarry to be generally in compliance with the various conditions of approvals and commitments made in associated documents. Specifically, the IEA makes the following assessments of compliance and performance.

DA 019/18

Compliance with all conditions which could be verified was confirmed.

DA 344-11-2001

Compliance was either confirmed, or the requirement to comply not triggered, for all but the following 11 conditions.

- Condition 2(2)(a). Relating to the fact that non-conformances against some conditions requirements were noted.
- Condition 3(3B). Relating to notification of DPIE of a noise agreement with a neighbouring landowner.
- Condition 3(4)(c). Relating to the implementation of noise management and monitoring on the Quarry Site, a period of in excess of 6 months between monitoring campaigns was recorded in contravention of the commitments of the Noise Management Plan at the time.
- Conditions 3(11) & 3(13). Relating to air monitoring criteria, it was identified that the period of deposited dust sampling fell outside the 30+/-2 days required under the relevant standard (being a commitment made in the Air Quality Management Plan).
- Condition 3(23C)(a). With reference to the preparation of an Aboriginal Cultural Heritage Management Plan, endorsement of the author (OzArk Environmental & Heritage Management) by the Department of Planning, Industry & Environment was not able to be confirmed.
- Condition 3(25). Relating to a requirement to provide appropriate long-term security for the Biodiversity Offset Strategy of the Quarry, payment into the Biodiversity Conservation Fund to account for the offsetting of biodiversity credits was made after the required date (31 December 2018).
- Condition 3(31)(c). Relating to the preparation and implementation of a Rehabilitation Management Plan, this document was submitted 3 days after the 3 month period from approval of Modification 3².
- Condition 3(37). Relating to the storage of liquids on the Quarry Site, waste oil drums and other containers were identified as being stored outside of bunded pallets.
- Condition 5(5)(b)/(c). Relating to the requirement to review and update if necessary management plans and strategies of the Wallerawang Quarry, evidence could not be supplied to confirm these plans and strategies were reviewed following the 2018 IEA.

² It is noted in the IEA that a request for a small extension to the time to submit was requested but rejected by the DPIE.

- Condition 5(8). With reference to the operation of the Community Consultative Committee (CCC) for the Quarry, minutes for one of the CCC meetings during the audit period was absent from the Wallerawang Quarry website.
- Condition 5(12). Relating to the provision of Annual Reviews to the DPE and Lithgow City Council, evidence of supply to Lithgow City Council could not be provided.
- Condition 5(17). Relating to the provision of Environmental Assessment documentation listed in Condition 2(2)(c), the environmental assessments for modifications 1 and 2 are not available on the Wallerawang Quarry website.

With respect to these non-compliances, excluding Condition 3(37), these reflect administrative non-compliances without potential for direct impact on the environment. This notwithstanding the IEA Response Plan provided as Section 3 reviews the recommendations made in the IEA with respect to correcting or preventing these along with timing for implementation.

ML 1633

The IEA confirms Walker Quarries as compliant against the 9 conditions of ML 1633.

EL 4473

The IEA confirms Walker Quarries as compliant against the 14 conditions of EL4473.

Water Access Licences and Approvals

The IEA confirms Walker Quarries as complying with all triggered conditions of:

- WAL 41884
- WAL42081
- WAL42390
- Approval 10CA123996, and
- Approval 10CA123169.

3.0 IEA Response Plan

Table 1 identifies those conditions against which the IEA identified non-compliances (refer to Section 2), the recommendations made, actions to be taken by Walker Quarries in relation to these recommendations, and the proposed timing to implement or complete any commitments made.

Table 2 identifies the additional recommendations made by the IEA to improve performance, actions to be taken by Walker Quarries in relation to these recommendations, and the proposed timing to implement or complete any commitments made.

We trust this information meets with your current requirements. Please do not hesitate to contact the undersigned on 1300 793 267 should you require clarification or further information.

Yours sincerely



Alex Irwin
Principal Environmental Consultant

Table 1 Response to Non-compliance Recommendations

Condition	Environmental Parameter	IEA Recommendation(s)	Response	Timing for Implementation
3(1)	Hours of Operations (Blasting)	Include the times of all blast events in future Blast Monitoring Reports and Annual Review documents published on the Walker Quarries website.	Walker Quarries does not intend on enforcing this recommendation, i.e. inclusion of blast time on the Blast Monitoring Report which is published on the website. The time of blast is supplied in separate reports supplied to Walker Quarries by the blasting contractor which contains additional and complex detail on the specifications of the blast (which Walker Quarries does not wish to publish on the website). Blast times will be included in the Annual Reviews prepared by 30 September each year	30 September 2021
3(3B)	Noise Agreement	It is recommended that WQ formally notify DPIE that a noise agreement is in place with the owner of property ID 'N2'.	Accepted. It is noted N2 is not a residence and, subject to endorsement of a revised Noise Management Plan, the location of noise monitoring location N2 will be relocated to 42 Rocky Waterhole Drive as a more appropriate noise monitoring location	30 September 2021
3(4)(c)	Noise Monitoring	Undertake noise monitoring bi-annually in accordance with the approved Noise Management Plan.	The Noise Management Plan was updated in September 2020 to remove reference to 6 monthly interval. Monitoring is now undertaken bi-annually (nominally September/October and March/April).	Complete and ongoing
3(11)	Air Quality Management	Ensure that dust sampling is undertaken within 30+/-2 day period required under the relevant standard.	Walker Quarries retains an Environmental Permit Planner which identifies required dates for monitoring and sampling.	Complete and ongoing
3(13)				
3(23C)(a)	Aboriginal Cultural Heritage Management Plan (ACHMP)	It is recommended that WQ seek formal DPIE endorsement of OzArk (or other suitably qualified person(s)) at the next revision of the ACHMP.	Endorsement will be sought prior to the next review of the ACHMP.	October 2021

Condition	Environmental Parameter	IEA Recommendation(s)	Response	Timing for Implementation
3(25)	Security of Biodiversity Offsets	It is recommended that WQ seek DPIE approval of the long-term offset security payments made to the Biodiversity Conservation Fund in 2018.	Secretary endorsement of the Biodiversity Management Plan (which provides the mechanism for offsetting disturbance) is considered to supersede this requirement. The condition references a superseded offset policy.	N/A
3(37)	Liquid Storage	Put additional containment / storage measures in place to ensure that containers holding hydrocarbons and oils are appropriately stored when not in active use, in accordance with AS1940.	WQ will review storage of hydrocarbons and provide for self-bunded pallets or other compliant containment areas.	October 2021
5(5)(b)/(c)	Management Plan Review	Consider adding a column providing the purpose of review/update to management plan document control tables to address this condition.	Walker Quarries does not intend on implementing this recommendation.	N/A
		Provide notification to DPIE on submission of each Annual Review that confirms any management plans scheduled to be revised.	Walker Quarries agrees to implement this recommendation	30 September 2021
5(8)	CCC	Upload CCC meeting minutes to the Company website following their distribution to CCC representatives.	Walker Quarries agrees to implement this recommendation	Within 10 days of CCC meeting
5(12)	Annual Review Distribution	Ensure that copies of WQ AR documents continue to be provided to LCC.	Lithgow Council was provided with a copy of the 2019/2020 Annual Review, along with a link to the location of previously Annual Reviews, in an email from Alex Irwin on 4 May 2021. Future Annual Reviews will be emailed to Lithgow City Council within 1 month of submission to the DPIE.	Complete and ongoing
5(17)	Website Content	Update the link to the current DPIE major projects database from the WQ website for access to DA 344-11-2001 approvals documentation.	Agreed	30 September 2021

Table 2 Response to Continual Improvement Recommendations

Condition	Environmental Parameter	IEA Recommendation(s)	Response	Timing for Implementation
DA 344-11-2001				
3(1)	Hours of Operations (Blasting)	Include the timing of all blast events in future Blast Monitoring Reports and AR documents published on the WQ website, to confirm compliance with approved blasting hours.	Walker Quarries does not intend on enforcing this recommendation, i.e. inclusion of blast time on the Blast Monitoring Report which is published on the website. The time of blast is supplied in separate reports supplied to Walker Quarries by the blasting contractor which contains additional and complex detail on the specifications of the blast (which Walker Quarries does not wish to publish on the website). Blast times will be included in the Annual Reviews prepared by 30 September each year	30 September 2021
3(4)(a)	Noise Management Commitments	Include comment on the annual operational noise Best Practice Measure review undertaken by WQ in future ARs.	Coinciding with (approximate) quarterly collection of groundwater data, an inspection will be completed of the Quarry Site to review implementation and performance of the commitments made in Noise Management Plan. These inspections will record whether each commitment is being implemented and any follow-up requirements. These inspections will be retained and used to assess performance in each Annual Review.	First inspection to be completed before 30 September 2021 Inspections approximately quarterly thereafter
3(4)(b)	Meteorological Conditions	Consider adding a section to the 'Daily Inspection Logs' to allow for comments on metrological conditions and/or any corrective actions taken to minimise noise emissions from site to be noted by the Quarry Manager.	Not required as Quarry Manager now has access to real-time met data.	N/A
		Recommend that WQ consider making real-time meteorological data available to the Quarry Manager, to assist in reviewing noise-enhancing weather conditions.	The Quarry Manager has access to real-time meteorological data.	Complete and ongoing

Condition	Environmental Parameter	IEA Recommendation(s)	Response	Timing for Implementation
3(5)	Noise Management Plan (NMP)	Include approval letter from DPIE as an Appendix to the NMP.	Walker Quarries retains correspondence on file and does not intend on implementing this recommendation.	N/A
3(5)(c)		It is recommended that WQ include comment on the annual BPM review of noise impacts in future ARs.	Coinciding with (approximate) quarterly collection of groundwater data, an inspection will be completed of the Quarry Site to review implementation and performance of the commitments made in Noise Management Plan. These inspections will record whether each commitment is being implemented and any follow-up requirements. These inspections will be retained and used to assess performance in each Annual Review.	First inspection to be completed before 30 September 2021 Inspections approximately quarterly thereafter
3(5)(e)		Recommend that the NMP is updated to modify the siting of attended monitoring location N2, or to add a fourth monitoring location representative of the closest privately-owned residence.	Subject to the agreement of the landowner, N2 will be relocated to the residence of 42 Rocky Waterhole Drive.	October 2021
3(9)(a)	Blast Monitoring	Include comments on fume management in future blast monitoring reports.	The Quarry manager will observe each blast and if fume (orange or red coloured dust) observed will record and report separately (as nominated in the Blast Management Plan).	October 2021
3(10)	Blast Management Plan (BMP)	Include approval letter from DPIE as an Appendix to the BMP.	Walker Quarries retains correspondence on file and does not intend on implementing this recommendation.	N/A
3(13)(a)	Air Quality Management	Consider adding a section to the 'Daily Inspection Logs' to allow for comments on metrological conditions and/or any corrective actions taken to minimise noise emissions from site to be noted by the Quarry Manager.	Not required as Quarry Manager now has access to real-time met data.	N/A
3(13)(b)		Recommend that WQ consider making real-time meteorological data available to the Quarry Manager, to assist in reviewing noise-enhancing weather conditions.	The Quarry Manager has access to real-time meteorological data.	Complete and ongoing

Condition	Environmental Parameter	IEA Recommendation(s)	Response	Timing for Implementation
3(14)	Air Quality Management Plan (AQMP)	Include approval letter from DPIE as an Appendix to the AQMP.	Walker Quarries retains correspondence on file and does not intend on implementing this recommendation.	N/A
3(18)	Soil and Water Management Plan (SWMP)	Include approval letter from DPIE as an Appendix to the SWMP.	Walker Quarries retains correspondence on file and does not intend on implementing this recommendation.	N/A
3(23C)	Aboriginal Cultural Heritage Management Plan (ACHMP)	Include approval letter from DPIE as an Appendix to the ACHMP.	Walker Quarries retains correspondence on file and does not intend on implementing this recommendation.	N/A
3(25)	Security of Biodiversity Offsets	It is recommended that WQ seek DPIE approval of the long-term offset security payments made to the Biodiversity Conservation Fund in 2018.	Secretary endorsement of the Biodiversity Management Plan (which provides the mechanism for offsetting disturbance) is considered to supersede this requirement. The condition references a superseded offset policy.	N/A
3(26)	Biodiversity Management Plan (BDMP)	Include approval letter from DPIE as an Appendix to the BDMP.	Walker Quarries retains correspondence on file and does not intend on implementing this recommendation.	N/A
		WQ should record and maintain mapping of areas treated for weeds in each year, to allow for the regular review of weed treatment methods and performance.	Accepted. Mapping of weed management to be included in future Annual Reviews.	30 September 2021 and ongoing.
3(30)	Rehabilitation	Review the performance of cover on relatively small bare areas of topsoil stockpiles and rehabilitation areas identified. Re-establishment of grass cover and/or infill plantings should be considered in these areas.	Some bare areas of rehabilitation is acknowledged however, natural revegetation is expected during Spring 2021. The areas will be monitored and supplementary seeding undertaken if natural revegetation does not occur.	By September 2022
3(33)	Visual Amenity	Investigate options to complete infill plantings or establish a cover crop on exposed sections of the visual bund.		
5(1)	EMS	Include approval letter from DPIE as an Appendix to future versions of the EMS.	Walker Quarries retains correspondence on file and does not intend on implementing this recommendation.	N/A

Condition	Environmental Parameter	IEA Recommendation(s)	Response	Timing for Implementation
EL 4473				
2(3)	Consultation	WQ consider the Exploration Code of Practice: Community Consultation in during consultation required for future activities under EL 4473.	When consultation is required, the code of practice will be adopted.	As required

