

METROMIX

METROMIX PTY LTD

ABN: 39 002 886 839

Environmental Management Strategy

for the

Teralba Quarry

January 2019

Initially Approved by
the Secretary's nominee, Howard Reed,
on 25 January 2019



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Prepared by:

Metromix Pty Ltd
ABN: 39 002 886 839
Level 4, 107 Phillip St
PARRAMATTA NSW 2150

Telephone: (02) 9849 7400
Facsimile: (02) 9635 4816
Email: Bills@metromix.com.au

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LIST OF ABBREVIATIONS

AHD	Australian Height Datum
ANZECC	Australian and New Zealand Environment and Conservation Council
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand
AS	Australian Standard
CCC	Community Consultative Committee
DP&E	Department of Planning & Environment
EA	Environmental Assessment
EMS	Environmental Management Strategy
EPA	Environment Protection Authority
ISO	International Organization for Standardization
NZS	New Zealand Standard
PA	Project Approval

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1. INTRODUCTION

1.1 SCOPE AND ENVIRONMENTAL MANAGEMENT STRATEGY OBJECTIVES

This *Environmental Management Strategy* (the Strategy) has been prepared by Metromix Pty Ltd (Metromix) for the Teralba Quarry (the Quarry). The Quarry is located west of the suburb of Teralba, beyond the western shores of Lake Macquarie (**Figure 1.1**).

This Strategy has been prepared in satisfaction of *Condition 5(1)* of Project Approval (PA) 10_0183 MOD 1 and describes the following.

- The activities approved under PA 10_0183 MOD 1.
- The strategic framework that Metromix will implement to ensure environmental issues are appropriately managed.
- The approvals and other licences that apply to the Quarry.
- The objectives and key performance outcomes for this Strategy and the Quarry.
- Key environmental monitoring measures that will be implemented.
- Evaluation of compliance with relevant assessment criteria and responding to non-compliances.
- The reporting and stakeholder engagement that Metromix will implement to ensure the community and relevant government agencies are informed about the activities within the Quarry.
- Complaints handling, response and dispute resolution procedures that will be implemented.
- Emergency response procedures that will be implemented.
- Roles, responsibilities, authorities and accountabilities of key personnel within the Quarry.
- Strategy review.

The approved Quarry is fully described in the following document.

- *Teralba Quarry Extensions Environmental Assessment* –on behalf of Metromix.

The objectives of the EMS are as follows.

- Provide the overall framework for environmental management at the Quarry.
- Ensure the operations are managed in accordance with:
 - the conditions associated with PA 10_0183 MOD 1;
 - the conditions associated with Environment Protection Licence (EPL) 536;
 - other licences and approvals from Government agencies; and
 - commitments made by the Company within the Environmental Assessment for the Teralba Quarry Extensions.



- Ensure the operations of the Quarry are managed in a way which provides for the effective control of all aspects of the Quarry throughout its operational life;
- Provide effective mechanisms for external communications, in particular development of an ongoing relationship with the local community; and
- Assist Metromix personnel in better administering their responsibilities regarding environmental due diligence and management.

This document is effectively an over-arching document to a range of other management plans that have also been prepared to guide operations within the Quarry. These include the following.

- *Noise Management Plan.*
- *Blast Management Plan.*
- *Air Quality Monitoring Program.*
- *Transport Management Plan*
- *Waste Management Plan.*
- *Water Management Plan (including a Surface Water Management Plan and Groundwater Management Plan)*
- *Aboriginal Cultural Heritage Management Plan.*
- *Biodiversity and Rehabilitation Management Plan*
- *Lower Level Extraction Management Plan (incorporating a Spontaneous Combustion Management Plan)*

It needs to be recognised at the outset that the approach to the management of environmental issues at the Teralba Quarry has been based upon Metromix's many years of experience at the Quarry. Unlike for new quarries, Metromix has been able to rely on its past performance which has generated very few complaints and instead attracted general support and low levels of opposition from the local community. This level of support was apparent by the lodgement of only five genuine objections to the extensions to the Quarry when the application for the Project Approval and accompanying EIS was placed on public exhibition in 2011/2012. Metromix's recognition as a responsible corporate citizen has also contributed to the support from the local community.

The Quarry is well situated from a topographic perspective in that the key activities within the Quarry are shielded from residences within the suburb of Teralba and the activity areas are well screened by substantial vegetation. The absence of any residences within 2km to the north and south of the Quarry and a distance at least 1.2km to the closest rural-residential properties in Wakefield provides an excellent separation distance. Each of these attributes have been contributing factors to the compliant monitoring results obtained for many years.

As a consequence of all of the above matters, Metromix has taken an approach to environmental management that reflects its past performance yet embraces pragmatically the government and community expectations of extraction industries in 2018.

1.2 APPROVED ACTIVITIES

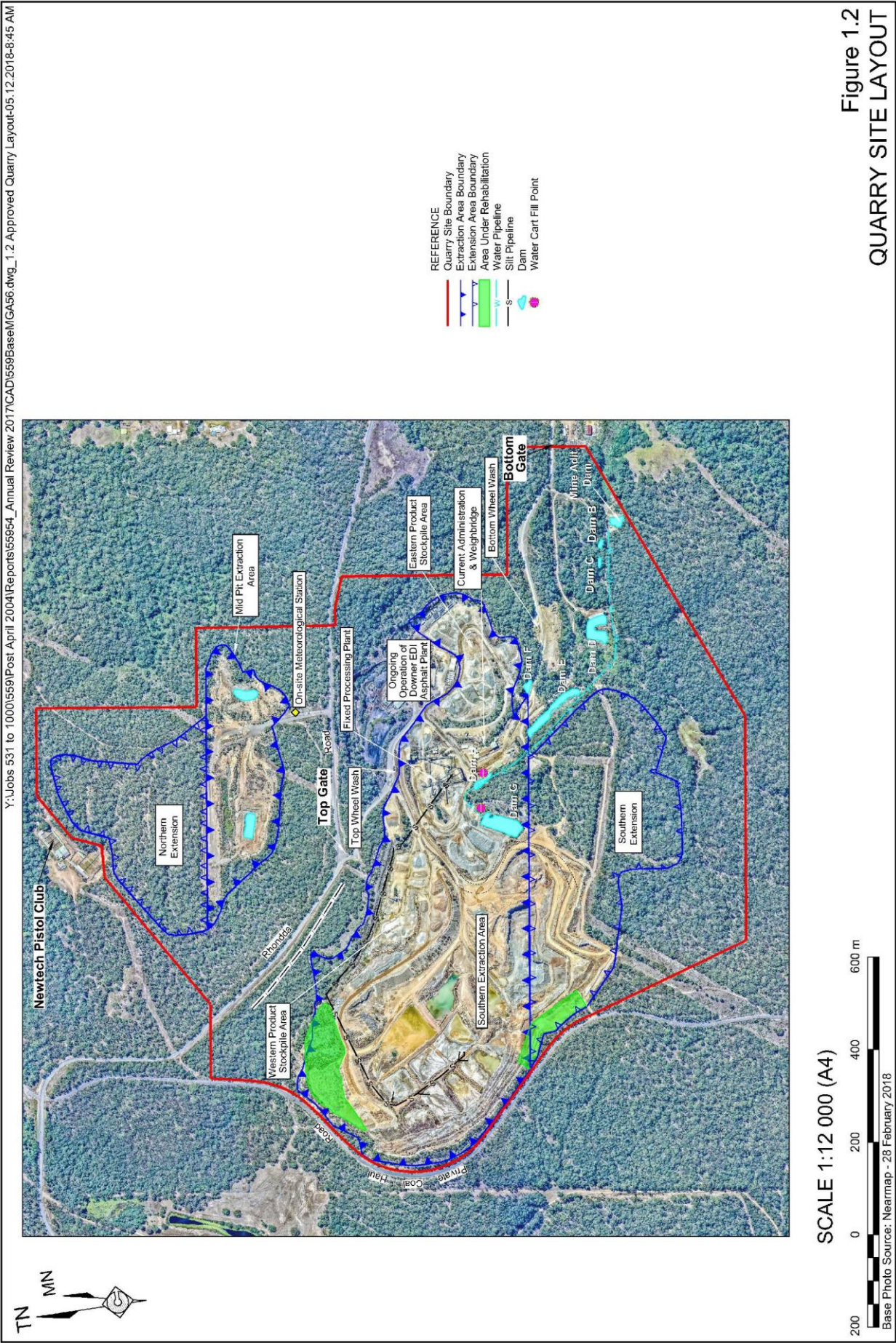
The approved activities within the Teralba Quarry comprise the full range of activities undertaken prior to 22 February 2013 and the extension of extraction operations to the north and south of the previously approved extraction areas. The approved activities on site comprise the following, the locations of which are displayed on **Figure 1.2**.

- Conglomerate extraction (blasting and excavation).
 - Southern Extraction Area.
 - Mid Pit Extraction Area.
 - Southern Extension.
 - Northern Extension.
- Processing Operations (size reduction, screening and blending).
 - Existing processing plant.
- On-site Load and Haul Operations.
 - Off-road trucks on the on-site road network.
 - Conveying primary-crushed rock from the Southern and Northern Extensions to processing plant (including conveyor beneath Rhondda Road).
- Off-site Transportation of Products.
- Vehicle/equipment maintenance and ancillary activities and stores.
- Administration and product despatch.
- Progressive rehabilitation and maintenance.

The sequence of extraction throughout the life of the Quarry will be consistent with the staging of vegetation clearing and therefore retirement of biodiversity credits specified in Conditions 3(54) to 3(56) of PA 10_0183 MOD 1. It is estimated that extraction activities over approximately the next 15 years, will only take place in the Southern Extension.

The relevant limitations upon the approved activities nominated in Conditions within Project Approval 10_0183 MOD 1 are as follows.

- “The Proponent shall not carry out quarrying operations below 20 AHD in the Southern Extension and 24m AHD in the Mid Pit Extraction Area and Northern Extension” (*Condition 2(6)* of PA 10_0183 MOD 1).
- “The Proponent shall not extract more than 1.2 million tonnes of extractive materials from the site in any calendar year” (*Condition 2(7)* of PA 10_0183 MOD 1).



“The Proponent shall not:

- a) transport more than 1 million tonnes of quarry products from the site in any calendar year; or
- b) dispatch more than 326 laden trucks from the site on any day; or
- c) dispatch more than 241 laden trucks per day or 20 per hour westwards along Rhondda Road;
- d) dispatch more than 85 laden trucks per day or 8 per hour eastwards through Teralba;
- e) dispatch laden trucks for travel through Teralba between 6:00pm and 6:00am; or
- f) receive unladen trucks via the Railway St entrance between 6:00pm and 7:00am”

(*Condition 2(8) of PA 10_0183 MOD 1*).

The approved quarry life is until 31 December 2038 (*Condition 2(5) of PA 10_0183 MOD 1*) and the approved hours of operation are set out in *Condition 3(6) of PA 10_0183 MOD 1* and presented in **Table 1.1**

Table 1.1
Approved Hours of Operation

Day	Receipt of Concrete or VENM	Loading and Dispatch of Quarry Trucks	Extraction and Processing Operations
Monday to Friday	7:00am to 5:00pm	4:00am Monday to midnight Friday	7:00am to 7:00pm
Saturdays	7:00am to 2:00pm	midnight Friday to 6:00pm Saturday	7:00am to 2:00pm
Sundays and Public Holidays	None	None	None

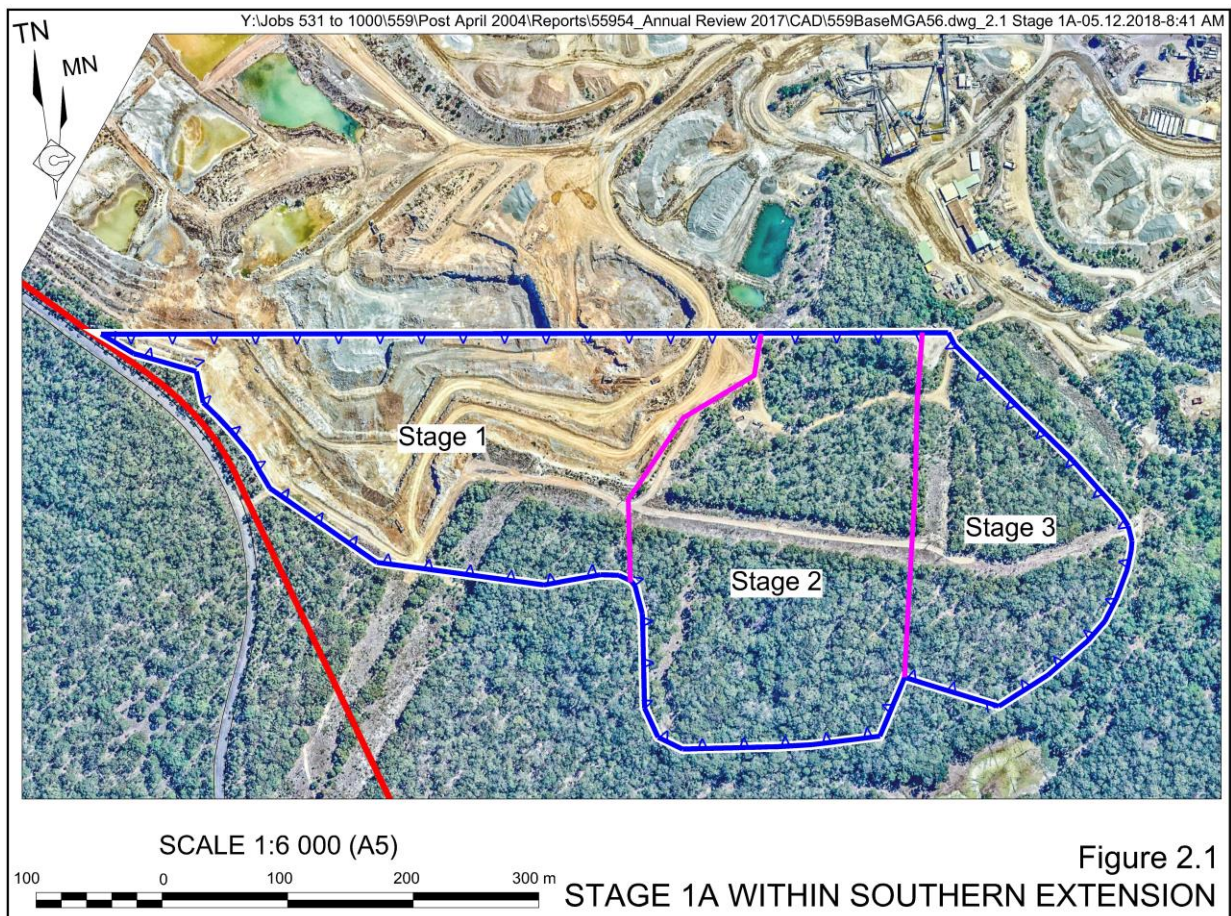
Note: Maintenance activities may occur at any time provided they are inaudible at privately owned residences.

2. STRATEGIC FRAMEWORK

This section describes the overall framework for environmental management for the ongoing operation of the Quarry. This information forms part of the integrated Management System adopted by Metromix for the Teralba Quarry. The EMS addresses the principal strategies to be adopted by Metromix, including the Metromix’s emphasis upon planning, implementation of its plans, compliance management and monitoring, follow-up actions and information dissemination processes. Metromix’s approach to each of the key elements of its strategic framework are as follows.

Planning

Metromix undertakes a range of planning tasks to ensure that all quarry-related tasks are undertaken in the correct order and manner and at the optimum time to minimise environmental impacts and importantly contain operational costs. Central to the planning element of the strategic framework is the development of a professionally designed extraction area in which benches and internal roads are positioned in optimum locations that satisfy rock quality requirements and practical/environmental considerations. Extraction planning for the Southern Extension has identified the initial extraction area – referred to as Stage 1-2-3. **Figure 2.1** displays the location of Stage 1-2-3 within the Southern Extension.



Other planning tasks undertaken for the quarry relate to water management, waste management (particularly process fines) and progressive rehabilitation. All planning across the quarry is recorded in 5 Year Mine Operating Plan i.e. an internal document that is aligned with other operational and administrative components of the quarry.

Plan Implementation

The implementation of all components of each 5 Year Plan and related documents is undertaken in accordance with a range of internal procedures developed by Metromix personnel based largely on site experience. All tasks are allocated to the appropriate personnel trained to undertake the respective tasks.

Compliance Management and Checking

Metromix operates the Teralba Quarry with a range of routine checks recorded in the on-site daily activities and check list register. In addition to the Company's internal auditing and checks, Metromix is required through *Condition 5(9)* of PA 10_0183 to commission independent audits of the development consent and related approvals at 3 yearly intervals.

Metromix undertakes a range of environmental monitoring programs to demonstrate its compliance with criteria nominated in PA10_0183 MOD 1 and EPL 536. Details of all monitoring undertaken by Metromix are set out in the range of management plans listed in Section 1.1.

Response to Incidents and Complaints

Metromix recognises the benefits of quickly responding to both incidents and complaints and accordingly operates with its “Rapid Online Reporting System” to document a consistent and thorough response. Whilst Metromix has not had to deal with many complaints over the past 30 years of operations at Teralba Quarry, the Company has in place a response process to ensure any complaint is swiftly and thoroughly investigated and followed up to ensure the issue that prompted the complaint is appropriately managed.

Consultation and Information Dissemination

Metromix consulted with the Teralba and Wakefield communities throughout the preparation of the Environmental Assessment. Likewise the Company has maintained its proactive corporate philanthropy through long-term support of Teralba Public School and Teralba Bowling Club. Metromix proposes through its website to provide a range of information that will inform the local community about its plans, activities and monitoring results.

The EMS is supported by a range of management plans and monitoring programs identified in Section 1.1. These are in turn supported by a range of detailed operational procedures that describe in detail the tasks to be undertaken to ensure appropriate management of the Quarry.

3. LEGAL AND OTHER REQUIREMENTS

3.1 PROJECT APPROVAL

The Company was granted Project Approval (PA) 10_0183 on 22 February, 2013, pursuant to Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act). Project Approval PA 10_0183 Modification 1 was approved on 16 April 2018. The approval includes the conditional requirements that govern the operation of the Quarry. A copy of the approval is included as **Appendix 1**.

This Strategy has been prepared in accordance with *Condition 5(1)* of PA 10_0183 MOD 1 (**Table 3.1**) and addresses the relevant elements of *AS/NZS ISO 140001 Environmental Management System 2004* guidelines. **Table 3.1** presents the requirements of PA 10_0183 MOD 1 in relation to this Strategy.

Table 3.1
Environmental Management Strategy-related Project Approval Requirements

Page 1 of 3

Schedule	Condition
ENVIRONMENTAL MANAGEMENT STRATEGY	
5(1)	<p>The Proponent shall prepare and implement an Environmental Management Strategy for the project to the satisfaction of the Secretary. This strategy must:</p> <ul style="list-style-type: none">(a) be submitted to the Secretary for approval with 3 months of the date of this modification;(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;

Table 3.1 (Cont'd)
Environmental Management Strategy-related Project Approval Requirements

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Schedule	Condition
ENVIRONMENTAL MANAGEMENT STRATEGY (Cont'd)	
5(1) (Cont'd)	<p>(e) describe the procedures that would be implemented to:</p> <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 during the course of the project; • respond to any non-compliance; • respond to emergencies; and <p>(f) Include:</p> <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 required to be carried out under the conditions of this approval.
5(4)	<p>Annual Review</p> <p>By the end of March each year, the Proponent shall review the environmental performance of the project to the satisfaction of the Secretary. This review must:</p> <p>(a) describe the development (including rehabilitation) that was carried out in the previous calendar year, and the development that is proposed to be carried out over the current calendar year;</p> <p>(b) include a comprehensive review of the monitoring results and complaints records of the project over the previous calendar year, which includes a comparison of these results against:</p> <ul style="list-style-type: none"> • the relevant statutory requirements, limits or performance measures/criteria; • the monitoring results of previous years; and • the relevant predictions in the EA; <p>(c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;</p> <p>(d) identify any trends in the monitoring data over the life of the project;</p> <p>(e) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and</p> <p>(f) describe what measures will be implemented over the current calendar year to improve the environmental performance of the project.</p>
5(5)(a)	<p>Revision of Strategies, Plans and Programs</p> <p>Within 3 months of the submission of an:</p> <ul style="list-style-type: none"> (a) annual review under condition 4 above; (b) incident report under condition 7 below; (c) audit report under condition 9 below; and (d) any modifications to this approval, <p>the Proponent shall review, and if necessary revise, the strategies, plans, and programs required under this approval to the satisfaction of the Secretary.</p>
5(6)	<p>Community Consultative Committee</p> <p>The Proponent shall establish and operate a Community Consultative Committee (CCC) for the project to the satisfaction of the Secretary. This CCC must be operated in general accordance with the Guidelines November 2016 Community Consultative Committees or its latest version and be operating within four months of the date of this approval.</p>

Table 3.1 (Cont'd)
Environmental Management Strategy-related Project Approval Requirements

Page 3 of 3

Schedule	Condition
ENVIRONMENTAL MANAGEMENT STRATEGY (Cont'd)	
5(7)	<p>Incident Reporting</p> <p>The Proponent shall notify, at the earliest opportunity, the Secretary and any other relevant agencies of any incident that has caused, or threatens to cause, material harm to the environment. For any other incident associated with the project, the Proponent shall notify the Secretary and any other relevant agencies as soon as practicable after the Proponent becomes aware of the incident. Within 7 days of the date of the incident, the Proponent shall provide the Secretary and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.</p>
5(8)	<p>Regular Reporting</p> <p>The Proponent shall provide regular reporting on the environmental performance of the project on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this approval.</p>
5(11)	<p>Access to Information</p> <p>Within 4 months of the date of this approval, the Proponent shall:</p> <p>(a) make the following information publicly available on its website:</p> <ul style="list-style-type: none"> the EA; current statutory approvals for the project; approved strategies, plans or programs; a summary of the monitoring results of the project, which have been reported in accordance with the various plans and programs approved under the conditions of this approval; <ul style="list-style-type: none"> a complaints register, updated on a monthly basis; minutes of CCC meetings; copies of any annual reviews (over the last 5 years); <ul style="list-style-type: none"> any independent environmental audit, and the Proponent's response to the recommendations in any audit; and any other matter required by the Secretary; and <p>(b) keep this information up-to-date, to the satisfaction of the Secretary.</p>

Table 3.2 presents the commitments made by Metromix in the Statement of Commitments (reproduced as Appendix 3 of PA10_0183 MOD 1) that relate to this Strategy which are not covered by the conditions of PA 10_0183 MOD 1 or the relevant Management Plans submitted to date.

Table 3.2
Environmental Management Strategy-related Commitments

Action		Timing
1. Activities and Operations		
1.1	Clearly mark the boundary of each area of activity, i.e. the boundary of the Southern and Northern Extensions.	Prior to the commencement of quarrying operations in the respective areas.
4. Security and Safety		
4.1	Construct and maintain the perimeter fence around the Northern Extension.	Prior to commencement of clearing works.
4.2	Maintain lockable gates at all entry/exit points. Lock gates outside of operational hours.	Ongoing.
4.3	Erect security warning signs at strategic locations around and within the Project Site. The signs would identify the presence of earthmoving equipment, deep excavations and steep slopes.	Ongoing.
4.4	Install bunds along the margins of all internal haul roads where those roads are positioned adjacent to steep slopes, adjacent to the boundary of the extraction area and adjacent to all other steep slopes.	Ongoing.
10. Noise and Vibration		
10.1	Ensure that the eastern side of the Southern Extension is extracted in such a manner that the active extraction face is retained on the eastern face thereby providing a topographic barrier between operating earthmoving equipment and residences to the east.	Ongoing throughout the extraction operations in the Southern Extension area.
10.2	Construct a 5m high bund on the eastern edge of the Mid Pit Extraction Area.	During Mid Pit Extraction operations.
12. Visibility		
12.1	Ensure all vegetation is maintained outside the Southern and Northern Extensions to provide long term shielding.	Ongoing.
12.2	Sequence extraction activities in the Southern Extension to limit exposure of western faces until vegetation is well established.	Years 3 to 11 (approx).
12.3	Progressively establish vegetation on extraction faces at 50mAHD and above in western section of the Southern Extension.	Years 3 to 11 (approx).
12.4	Advance extraction in the eastern section of the Southern Extension in strips parallel to north-south faces.	Years 22 to 30 (approx).
12.5	Include Annual photographs of the progressive rehabilitation of quarry benches in each AEMR.	
16. Documentation and Further Approvals		
16.1	Environmental Management Plan (EMP). Focus on the next 5 years.	Within 6 months of receipt of project approval.
16.11	Hydrocarbon Management Plan. (Incorporating the storage and use of fuel and spill management.) (Internal Only).	Within 6 months of receipt of approval.
15. Bushfire Hazard		
15.1	Adopt appropriate controls during re-fuelling to avoid fires.	Ongoing.
15.2	Ensure fire extinguishers are fitted to all site vehicles.	Ongoing.

3.2 LICENCES AND PERMITS

Table 3.3 identifies various licences and permits issued to the Company for the Quarry.

Table 3.3
Licence and Permits

Type	Consent/Approval Number	Date of Issue	Expiry	Comments
Environment Protection Authority				
Environment Protection Licence	EPL 536		NA	Licence is issued annually 1 June.
NSW Office of Water				
Water NSW	HN/20PT911863D	01/07/2016	Cessation of extraction activities	Maximum annual limit = 1407ML

3.3 ENVIRONMENTAL MANAGEMENT PLANS

Section 1.1 incorporates a list of the various management plans all of which need to be fully implemented throughout the life of the quarry.

3.4 LEGISLATION

Key legislation that will guide management of the Quarry includes the following.

- *Environmental Planning and Assessment Act 1979.*
- *Local Government Act 1993.*
- *Protection of the Environment Operations Act 1997.*
- *Contaminated Land Management Act 1997.*
- *National Parks and Wildlife Act 1974.*
- *Commonwealth National Greenhouse and Energy Reporting Act 2007*
- *Dangerous Goods Act 1975.*
- *Roads Act 1993.*
- *NSW Work Health and Safety (Mines & Petroleum) Act 2031.*
- *NSW Work Health and Safety (Mines & Petroleum) Regulations 2014.*
- *Protection of the Environment Administration Act 1999.*
- *Threatened Species Conservation Act 1995.*
- *Water Management Act 2000.*
- *Commonwealth Environment Protection and Biodiversity Conservation Act 1999.*
- *Soil Conservation Act 1938.*
- *Water Act 1912.*

3.5 STANDARDS

The following standards are, or are potentially, of relevance to the Quarry.¹

- AS 3580.1.1 - 2016 Methods for Sampling and Analysis of Ambient Air – Guide to Siting Air Monitoring Equipment.
- AS 3580.14 - 2011 Methods for sampling and analysis of ambient air Meteorological monitoring for ambient air quality monitoring applications
- AS 3580.10.1 – 2016 Methods for Sampling and Analysis of Ambient Air – Determination of Particulates – Deposited Matter – Gravimetric Method.
- AS / NZS 3580.9.3 – 2015 Methods for sampling and analysis of ambient air – Determination of suspended particulate matter – Total Suspended Particulate Matter (TSP) – High volume sampler gravimetric method.
- AS / NZS 3580.9.6 – 2015 Methods for sampling and analysis of ambient air – Determination of suspended particulate matter PM₁₀ high volume sampler with size-selective inlet – Gravimetric Method.
- AS 3780-2008 The storage and handling of corrosive substances.
- AS 1055 2018 Acoustics – Description and Measurement of Environmental Noise – General Procedures.
- AS IEC 61672-2004 Electroacoustics – Sound Level Meters.
- AS 4282 – 1997 – Control of Obtrusive Effects of Outdoor Lighting.
- AS 1940 – 2017 The Storage and Handling of Flammable and Combustible Liquids.
- AS 4452 — 1997 Storage and handling of toxic substances.
- AS 1596 – 2014 The Storage and Handling of LP Gas.
- ISO 14001 – 2016 Environmental Management Systems – Requirements with guidance for use.
- ISO 19011 – 2002 Guidelines for Auditing Management Systems.

3.6 GUIDELINES

The following guidelines are, or are potentially, of relevance to the Quarry's Management System, particularly with respect to environmental issues.

- Australian Dangerous Goods Code 7th Edition.
- Environment and Health Protection Guidelines – On-site Sewage management for Single Households (1998).

¹ AS refers to an “Australian Standard”, NZS refers to “New Zealand Standard” and ISO refers to the “International Standards Organisation”.

- Community Consultative Committee Guidelines for State Significant Developments, November 2016).
- Managing Urban Stormwater: Soils and Construction Department of Housing in (2004).
- *Managing Urban Stormwater: Soils and Construction* – Volume 2C – Unsealed Roads - Department of Environment and Climate Change in (2008).
- *Managing Urban Stormwater: Soils and Construction* – Volume 2E – Mines and Quarries - Department of Environment and Climate Change in (2008).
- National Water Quality Management Strategy: Australian Guidelines for Water Quality Monitoring and Reporting - ANZECC/ARMCANZ in (2000).
- NSW EPA Approved Methods for the Sampling and Analysis of Air Pollutants in NSW - Environment Protection Authority in (2007).
- NSW EPA Approved Methods and Guidance for Modelling and Assessment of Air Pollutants in NSW - Environment Protection Authority in (2016).
- EPA 454/R-99-005 *Meteorological monitoring guidance for regulatory modelling applications* - United States Environment Protection Authority in (2000).
- *NSW Road Noise Policy* - Environment Protection Authority in (2011).
- *NSW Industrial Noise Policy* - Environment Protection Authority in (2000) and the Noise Policy for Industry (2017) as it refers to annoying noise characteristics (Appendix C).
- *Waste Classification Guidelines* - Department of Environment, Climate Change and Water in (2014).

3.7 CONSULTATION

In accordance with *Condition 5(1)(f)*, this EMS is required to ‘include copies of any strategies, plans and programs approved under the conditions of this approval...’. The various management plans compiled for the Quarry contain a nominated consultation section within each plan relating to consultation with government agencies and the wider community, if appropriate. Furthermore, consultation specifically for the EMS is not required within PA 10_0183 MOD 1 and as such, consultation is discussed separately in each management plan for the Quarry, and not this document.

4. OBJECTIVES AND OUTCOMES

Table 4.1 records the objectives and key performance outcomes with respect to each of the environmental aspects nominated within PA 10_0183 MOD 1. The key performance outcomes will be used as a means by which Metromix, government agencies and the local community can assess progress towards the achievement of the nominated objectives. These objectives and outcomes are largely drawn from the individual management plans for the Quarry.

Table 4.1
Environmental Objectives and Outcomes

Page 1 of 3

Objectives	Key Performance Outcomes
Noise, Blasting and Air Quality,	
(a) To ensure compliance with all relevant PA10_0183 MOD 1 and EPL 536 criteria and reasonable community expectations.	(i) Compliance is achieved with all relevant criteria nominated in the PA10_0183 MOD 1 and EPL 536 and reasonable community expectations.
(b) To implement appropriate management and mitigation measures during all stages of the Quarry.	(ii) All identified management and mitigation measures are implemented to the extent required.
(c) To implement an appropriate monitoring program to establish compliance or otherwise with relevant criteria during all stages of the Quarry.	(iii) All identified monitoring is undertaken in accordance with the relevant procedures and at the relevant intervals.
(d) To implement an appropriate complaints handling and response protocol	(iv) Complaints (if any) are handled and responded to in an appropriate and timely manner.
(e) To implement continual improvement for investigating, implementing and reporting on reasonable and feasible measures to reduce potential effects.	(v) An appropriate continual improvement program has been implemented.
(f) To implement an appropriate incident reporting program, if required.	(vi) Incidents (if any) are reported in an appropriate and timely manner.
Soil and Water	
(a) To ensure compliance with all relevant PA10_0183 MOD 1 and EPL 536 criteria and reasonable community expectations.	(i) Compliance with all relevant criteria and reasonable community expectations, as determined in consultation with the relevant government agencies.
(b) To ensure sufficient water is available during all phases of the life of the Quarry for environmental and operation purposes	(ii) Sufficient water is available for all Quarry-related purposes, including for environmental and operational purposes.
(c) To ensure that appropriate sediment and erosion control measures are implemented and maintained.	(iii) All water management structures constructed and maintained in accordance the approved Water Management Plan.
(d) To ensure that appropriate chemical and hydrocarbon management is implemented and maintained.	(iv) All chemicals and hydrocarbons stored and used in accordance with manufactures instructions, Material Data Safety Sheet requirements and Australian Standards in a manner that ensure risk of water contamination is reduced to an acceptable level.
(e) To ensure that water within the Quarry is used in an efficient and environmentally responsible manner.	(v) Water resources are managed in a manner that maximises environmental flows and minimised the potential for adverse impacts to water resources.
(f) To ensure that an appropriate surface water and groundwater monitoring program is implemented throughout the life of the Quarry.	(vi) Water monitoring programs are sufficiently robust to detect any adverse water quality or quantity impacts associated with the Quarry to allow appropriate adaptive management measures to be implemented.
(g) To ensure that appropriate contingency and emergency management plans are in place and regularly reviewed.	(vii) Contingency and emergency management plans are prepared for all relevant contingencies and regularly reviewed and upgraded.
(h) To implement an appropriate incident reporting program, if required.	(viii) Incidents (if any) reported in an appropriate manner.
(i) To ensure that all relevant water-related information is made available in a timely and accessible manner.	(ix) All water-related information is available in a timely manner on the Quarry website.

Table 4.1 (Cont'd)
Environmental Objectives and Outcomes

Page 2 of 3

Objectives	Key Performance Outcomes
Rehabilitation and Landscape Management	
(a) To ensure compliance with all relevant PA10_0183 MOD 1 and EPL 536 criteria and reasonable community expectations.	(i) Compliance with all relevant criteria and reasonable community expectations, as determined in consultation with the relevant government agencies.
(b) To implement appropriate progressive rehabilitation and landscape management and mitigation measures during all stages of the Quarry	(ii) All identified rehabilitation and landscape management and mitigation measures are implemented in a timely manner.
(c) To appropriately manage preparation works to ensure that suitable rehabilitation material remain for rehabilitation operations during all stages of the Quarry	(iii) Sufficient, viable rehabilitation materials are available for rehabilitation operations throughout all stages of the Quarry
(d) To ensure that the visual amenity of residences and public vantage points is not unacceptably impacted by Quarry-related activities.	(iv) Visual amenity management measures are effective and implemented in a timely manner.
(e) To establish a final landform that is consistent with that identified in the Environmental Assessment.	(v) Final landform is safe, stable, and non-polluting and can be utilised for native vegetation or future industrial zoned purposes.
(f) To establish an appropriate final soil profile and vegetation community on the final landform	(vi) Final soil cover and vegetation has similar soil viability to that is similar with industrial zoned land
(g) To establish an appropriate beneficial final land use consistent with surrounding land uses.	(vii) Final landform is suitable for an appropriate beneficial land use that is consistent with surrounding land uses at the time of Quarry closure.
(h) To appropriately manage those sections within the Quarry Site that would not be used for Quarry-related activities.	(viii) Identified areas are managed in a manner that ensures appropriate beneficial use of that land.
(i) To implement appropriate weed, pest and bushfire management measures	(ix) Weeds, pests and bushfire risks are appropriately managed in consultation with neighbouring landholders.
(j) To implement an appropriate complaints handling and response protocol	(x) Complaints (if any) are handled and responded to in an appropriate manner.
(k) To implement appropriate corrective and preventative actions, if required.	(xi) Corrective and preventative actions are implemented in a timely manner, if required
(l) To implement an appropriate incident reporting program, if required.	(xii) Incidents (if any) are reported in an appropriate manner.
Aboriginal Cultural Heritage	
(a) To ensure compliance with Part 6 of the NPW Act, namely to avoid harm to Aboriginal objects or sites.	(i) Demonstrate due diligence in efforts to identify Aboriginal sites or objects.
(b) To ensure compliance with all relevant project approval conditions, commitment and reasonable community expectations.	(ii) Compliance with all relevant criteria and reasonable community expectations, as determined in consultation with the relevant government agencies.
(c) To engage relevant local Aboriginal stakeholders in Aboriginal cultural heritage management of the Quarry.	(iii) Identify Registered Aboriginal Parties in accordance with the OEH guideline document "Aboriginal Cultural Heritage Consultation Requirements for Proponents".

Table 4.1 (Cont'd)
Environmental Objectives and Outcomes

Page 3 of 3

Objectives	Key Performance Outcomes
Aboriginal Cultural Heritage (Cont'd)	
(d) To implement appropriate management measures during all stages of the Quarry.	(iv) All nominated management measures, including limits on disturbance, monitoring and stop work procedures, are implemented.
(e) To implement competence training and awareness in relation to cultural heritage management.	(v) Record of competence training completion held for all personnel.
(f) To implement an appropriate complaints handling and response protocol	(vi) Complaints (if any) handled and responded to in an appropriate manner.
(g) To implement appropriate corrective and preventative actions, if required.	(vii) Corrective and preventative actions implemented, if required
(h) To implement an appropriate incident reporting program, if required.	(viii) Incidents (if any) reported in an appropriate manner.

5. MONITORING

In order to meet the objectives and key performance outcomes listed in Section 4, Metromix's monitoring strategy has been outlined in detail in the respective Management Plans and includes a description of the monitoring locations, timing and criteria for each parameter defined in PA10_0183 MOD 1. **Table 5.1** presents an overall summary of Metromix's environmental monitoring program.

The Quarry Supervisor will be responsible for the implementation and continued monitoring requirements for the Quarry.

Table 5.1
Monitoring Requirements

Page 1 of 4

Environmental Monitoring Requirement	Monitoring Location (See Figure 5.1)	Frequency	Criteria	Timing	Characterisation/ Quantification	Record of Information
Noise Management Plan						
Attended Noise Monitoring	Location EPL- – A Location EPL – B Location EPL – C* Location EPL – D Location EPL – E Location EPL – F* Location EPL – H Note* - Metromix has obtained permission for locations C and F to be omitted.	Annually	See Condition 5 of Schedule 3 of PA 10_0183	15 minute measurement period Day Shoulder, Day, Evening and Night time	For compliance LAeq 15 mins For background information LAmax LA90 LAeq	Operator's Name. Location of Monitoring. Recording Intervals (date and time). Meteorological conditions. Statistical noise level descriptor with notes identifying principal noise sources. Instrument make, model, serial number and calibration details. Brief description of activities occurring within Project Site. Relevant fixed plant and mobile equipment, operating shift logs and location.
Blast Management Plan						
Blast Monitoring	1 2 3	Every Blast [#]	See Condition 9 of Schedule 3 of PA 10_0183	At time of blast initiation	-	Ground vibration (mm/s) Airblast overpressure (dB(L))

[#] Sites 2 and 3 will be monitored during every blast south of Rhondda Road whilst Sites 1 and 2 will be monitored during every blast north of Rhondda Road.

Table 5.1 (Cont'd)
Monitoring Requirements

Page 2 of 4

Environmental Monitoring Requirement	Monitoring Location (See Figure 5.1)	Frequency	Criteria	Timing	Characterisation/ Quantification	Record of Information
Air Quality Monitoring Program						
PM ₁₀	HVAS	Every 6 th Day for a 24-hr period	50µg/m ³ averaged over 24 hours 30 µg/m ³ annual average	24 hrs	PM ₁₀ concentration averaged over 24 hours PM ₁₀ concentration annual average	Meteorological Data – rainfall, wind speed and direction. PM ₁₀ dust concentration.
Deposited dust	EPL 1 – Hillside EPL 10 – Margaret EPL 11 – Myrtle EPL 9 – Rhondda EPL 8 – Rodgers	Monthly	Maximum Increase 2g/m ² /month Maximum Total 4g/m ² /month (Annual average)	Continuous (results assessed for 30±2 day period)	Monthly deposited dust levels	Meteorological – temperature, wind speed and direction and sigma-theta. Deposited dust levels
Meteorology	Meteorological Station	Continuous	-	Continuous	-	Temperature Rainfall Wind speed and direction Solar radiation Barometric pressure Humidity
Greenhouse	Electrical and Diesel usage	Collated monthly and reported annually	-	-	-	Monthly electricity and Diesel Usage.

Table 5.1 (Cont'd)
Monitoring Requirements

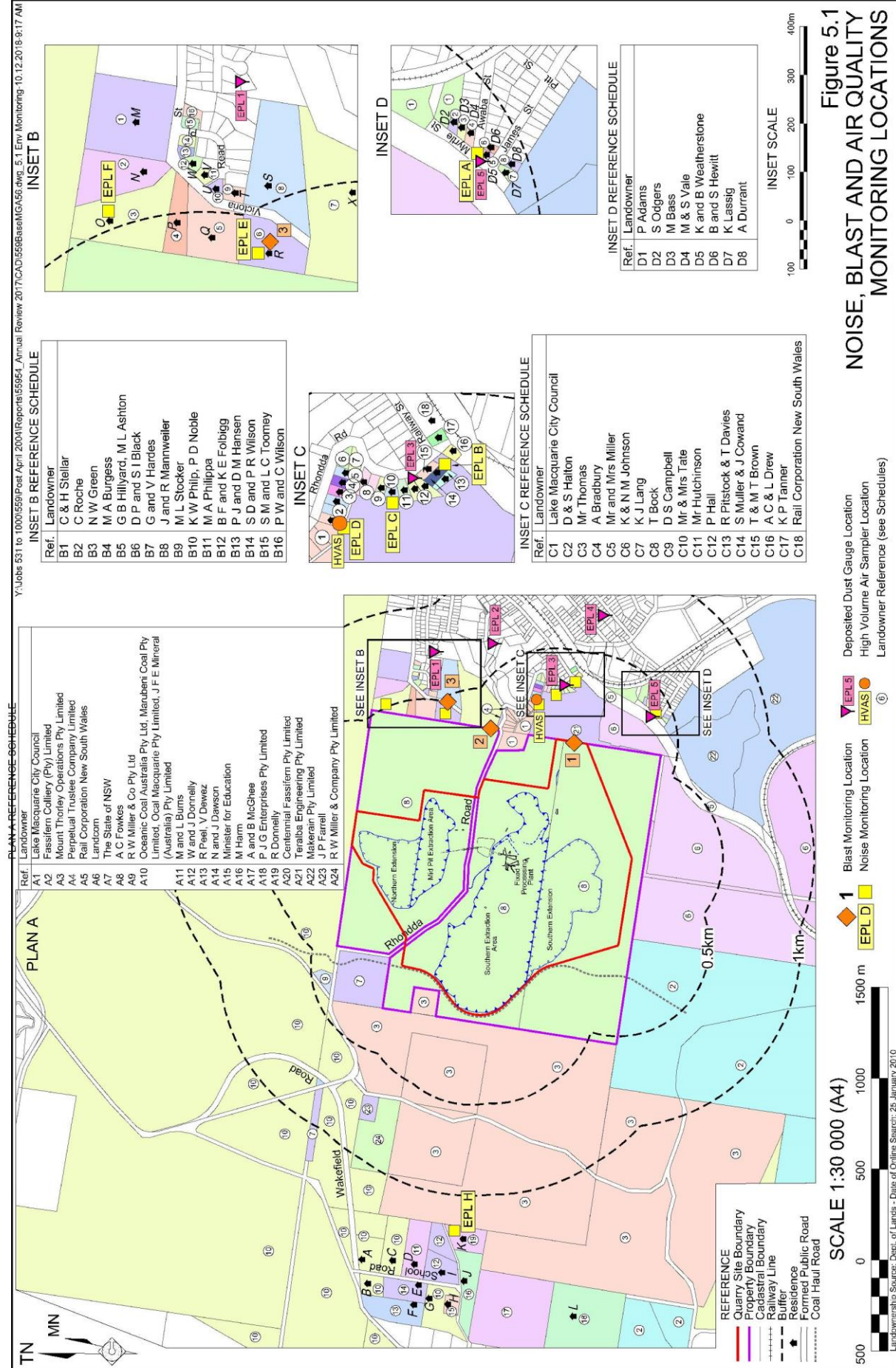
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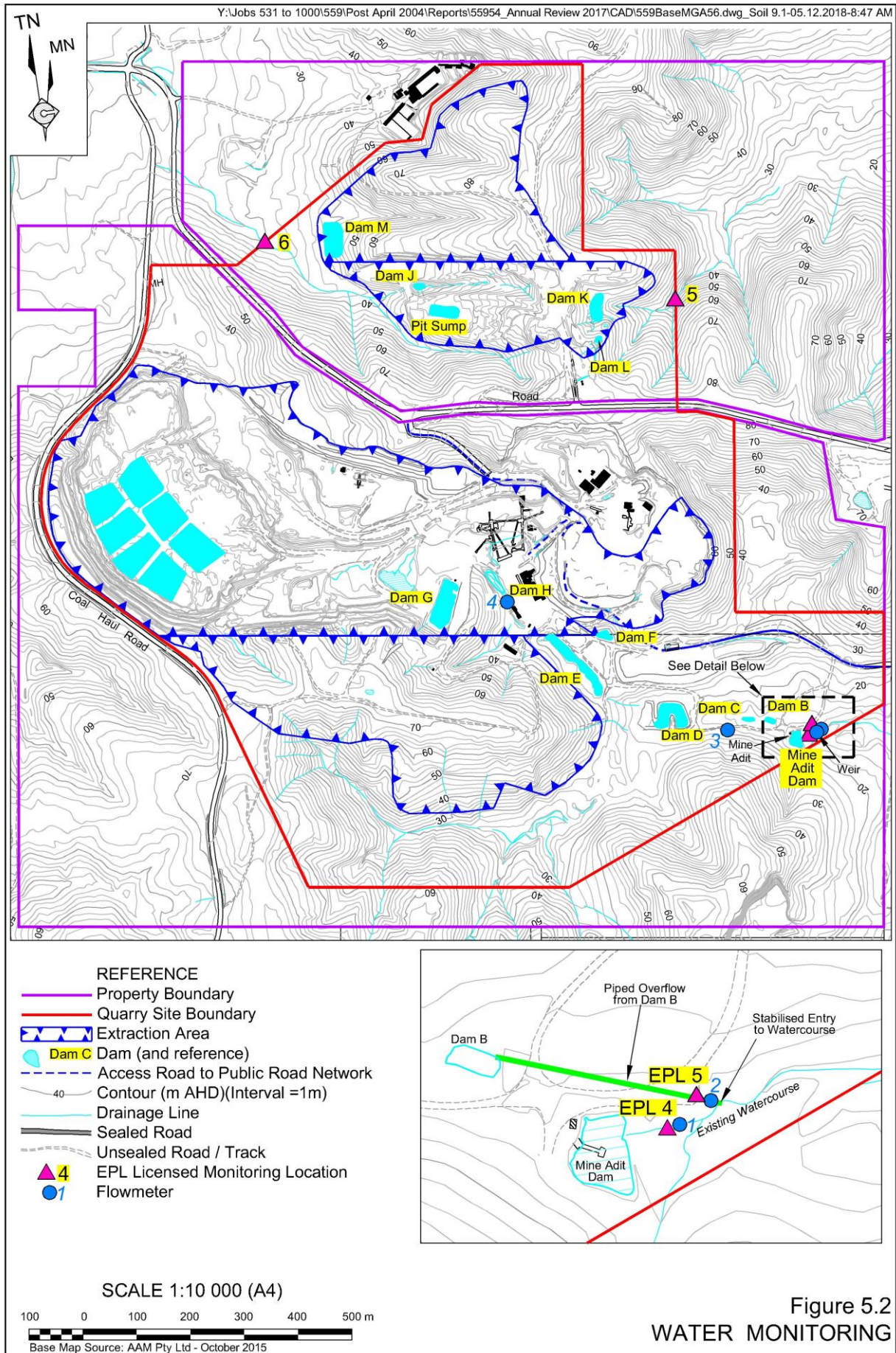
Environmental Monitoring Requirement	Monitoring Location (See Figure 5.2)	Frequency	Criteria	Timing	Characterisation/ Quantification	Record of Information
Water Management Plan						
Water Monitoring	EPA – 4 (Mine Adit Dam)	Monthly	Electrical Conductivity Oil & Grease 10mg/L pH 6.5 – 8.5 TSS 50mg/L	Ongoing	Oil and Grease, Total Suspended Solids and pH	Date and time of sampling Water quality
Surface Water Monitoring	EPA – 5 (Dam B) EPA – 6 (Northwest Boundary) EPA – 7 (Northeast Boundary)	Daily during any discharge	Electrical Conductivity Oil & Grease 10mg/L pH 6.5 – 8.5 TSS 50mg/L	Ongoing	Oil and Grease, Total Suspended Solids and pH	Date and time of sampling Water quality
Surface Water Flow Monitoring	FM1 to FM8	Continuous (during flow)	None	Ongoing	Annual water flow	Water flow in litres
Transport Management Plan						
Daily Truck Movements	Weighbridge	Daily	In accordance with PA 10_0183 (hours and direction of travel)	Ongoing	Daily truck movements Tonnage (production)	Hourly, weekly, monthly and annual data published on the Metromix website and in the Annual Review

Table 5.1 (Cont'd)
Monitoring Requirements

Page 4 of 4

Environmental Monitoring Requirement	Monitoring Location (See Figure 5.2)	Frequency	Criteria	Timing	Characterisation/ Quantification	Record of Information
Biodiversity and Rehabilitation Management Plan						
Landscape Management Inspection	Quarry Site	Quarterly	None	Quarterly	Weed infestation Feral animal presence Landscape condition including fences, fire breaks, surface stability and evidence of erosion. Illegal entry to site.	Quarterly record presented in Annual Review
Bushfire Risk	Quarry Site	Annual	None	With RMS, preferably in mid to late winter	Bush fire fuel loads	As required
Rehabilitation condition	Areas under rehabilitation	Annual	None	January / February	Review of condition and success of revegetation activities	Condition and work required reported in the Annual Review.
Nesting box condition and use	Nest boxes within property boundary	Annual	None	Spring	Review of fauna use of nesting boxes with recommendations for relocation of boxes.	Annual report by suitably experienced person included in Annual Review.





6. EVALUATION OF COMPLIANCE

Metromix Teralba Quarry carries out an internal review that relates to compliance of all approvals, licences and permits. The internal review is undertaken on a 12 monthly basis and presented in the Annual Review. Metromix adopts a process whereby after the results of each monitoring program become available, a monitoring report is prepared by the relevant specialist consultant, monitoring contractor or Company personnel.

The Quarry Manager, or his/her delegate, reviews each report and associated monitoring results against the relevant assessment criteria and implements the relevant actions, if any, identified in the following Section in the event that exceedances of the assessment criteria are identified.

7. CORRECTIVE AND PREVENTATIVE ACTIONS

Where an exceedance of the relevant assessment criteria are observed the Quarry Manager, or his/her delegate, may identify a range of corrective and preventative actions in accordance with the procedures identified in the relevant Management Plan.

Corrective and/or preventative actions will be assigned to relevant Company personnel. Actions will be communicated by the Quarry Manager, or their delegate, internally through planning meetings and toolbox talks and outstanding actions will be monitored for their effectiveness upon completion. In the event an exceedance of any relevant criteria identified in Project Approval PA 10_0183 MOD 1 or EPL 536, the exceedance will be investigated to determine the likely cause. The investigation will seek to determine:

- description of the “quick fix” solution, if applicable;
- description of the root cause(s) of the problem;
- description of the methods to eliminate the root cause(s); and
- description of steps followed or to be followed to ensure that what is prescribed to fix the problem is in fact doing so.

A copy of the investigation report and regular updates on the status of the identified corrective and/or preventative actions will be provided to the relevant government agencies and, if required, any complainant. In addition, a copy of all reports will be included in the Annual Review.

8. INCIDENT REPORTING

In the event of a non-compliance with any conditions or a specific complaint being made (i.e. noise, blast, traffic, air or water quality-related), Metromix personnel will attempt to stop and/or control the source of the incident that has caused the complaint. If they cannot control the incident, then they are to report the incident to their supervisor/manager.

The incident is to be recorded using the “Rapid Online Reporting System” that is available through the Metromix website. The Risk Manager is to be notified as soon as possible to assist in determining corrective actions.

In the event that an initial investigation identifies a non-compliance of any conditions, Metromix will follow the necessary procedures outlined within the respective Management Plans, including follow-up actions such as the submission of action plans to government agencies in response to the complaint, mitigation measures implemented etc.

In addition, a copy of all complaint reports will be provided to the Community Consultative Committee, made publicly available on the Metromix website and included in the *Annual Review*.

9. COMPLAINTS HANDLING AND DISPUTE RESOLUTION

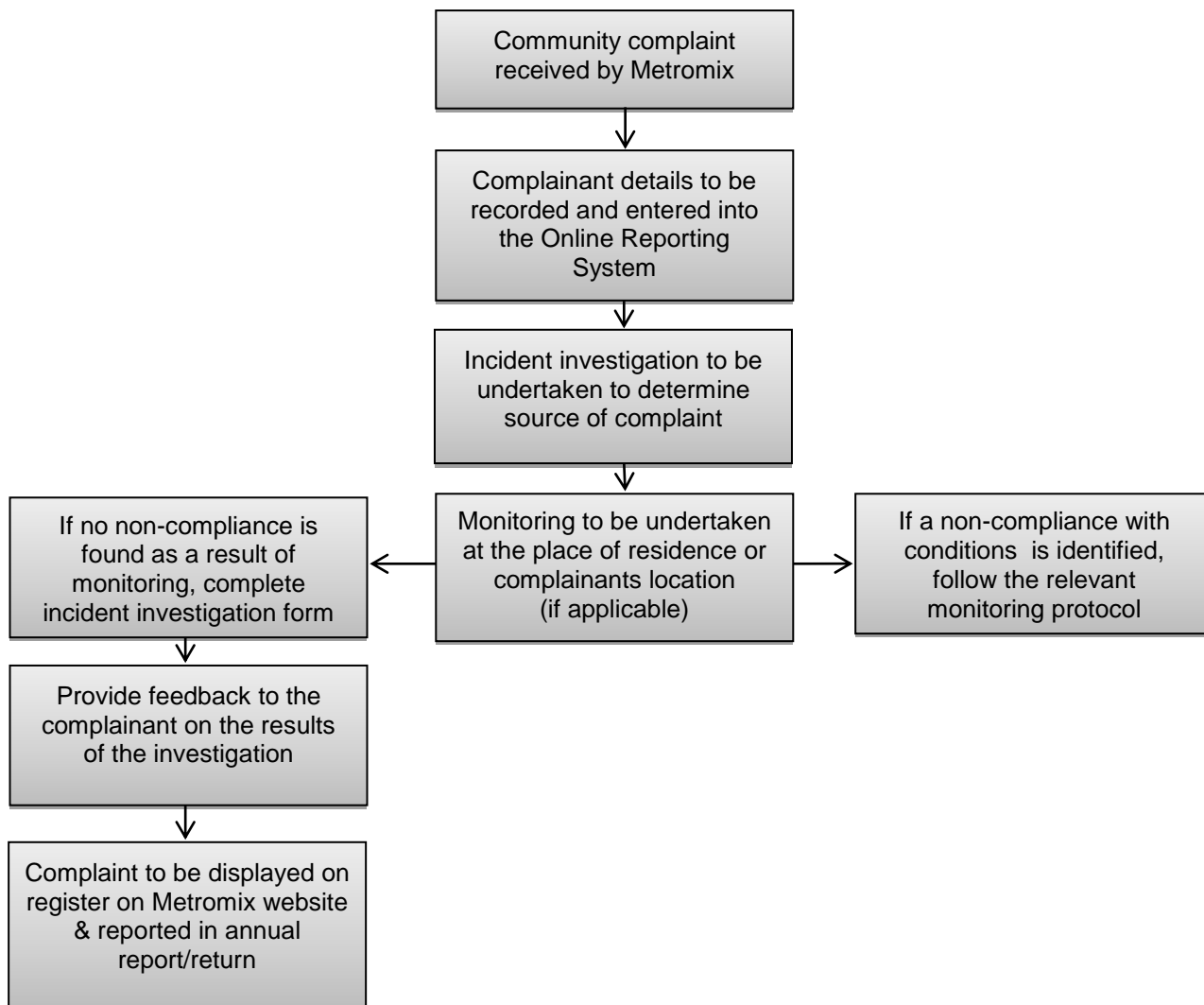
Metromix will advertise the community inquires/complaints line 02 4950 6640 as a minimum in the local phone directory and may also consider advertising the number through local media or on newsletters.

Metromix will respond to any registered community inquiries or complaints received by this number as described in the Rapid Online Reporting System.

The flowchart displayed in **Figure 9.1** shows the process that Metromix will follow in the event a complaint being received.

The Risk Manager will determine which parties will be involved in resolving any disputes arising throughout the life of the Quarry. Given there have been no disputes relating to the operation of the Quarry over the past 30 years, Metromix considers the likelihood of disputes to be extremely low.

Figure 9.1 Complaint Flowchart



10. EMERGENCY RESPONSE

Table 10.1 presents the procedures that will be implemented in the event of an emergency within the Site. It is noted that emergency preparedness will be managed through the Metromix's standard quarry planning, design and operational standards and the investigation and reporting in relation to the emergency will be managed through the incident reporting and review process identified in the relevant Management Plan. As a result, **Table 10.1** presents the immediate and recovery stage responses only.

The Quarry Manager will be responsible for all emergency preparation, response and investigation-related activities.

Table 10.1
Emergency Response Procedures

Page 1 of 2

Emergency	Response - Immediate	Response – Recovery Stage
Fire-related Emergency		
Plant fire (mobile or fixed)	<ul style="list-style-type: none"> • Evacuate and account for all personnel • Notify Emergency Services • Fight fire (if safe to do so) • Isolate power/fuel supply 	<ul style="list-style-type: none"> • Restrict access to plant to allow investigation. • Ensure any hydrocarbon or other leaks managed.
Bushfire – initiation on Site	<ul style="list-style-type: none"> • Evacuate and account for all personnel • Notify Emergency Services • Use Site water cart and other equipment to extinguish or isolate fire (if safe to do so). 	<ul style="list-style-type: none"> • Monitor burnt area for re-ignition under guidance of the Rural Fire Service
Bushfire – encroachment from off site	<ul style="list-style-type: none"> • Advise personnel and prepare to evacuate if required. • Contact Emergency Services and offer assistance. • Use mobile plant to create/upgrade fire break (if required and safe to do so) 	<ul style="list-style-type: none"> • Monitor burnt area for re-ignition under guidance of the Rural Fire Service
Medical Emergency		
Life-threatening medical emergency	<ul style="list-style-type: none"> • Administer first aid if safe to do. • Contact Emergency Services. 	<ul style="list-style-type: none"> • Notify and assist patient's family. • Provide counselling for co-workers (if required)
Non-life threatening medical emergency	<ul style="list-style-type: none"> • Administer first aid. 	
Ground stability/collapse Emergency		
Failure of Quarry highwall / unplanned collapse of quarry floor	<ul style="list-style-type: none"> • Evacuate relevant section of the Extraction Area 	<ul style="list-style-type: none"> • Maintain a suitable exclusion zone until advised otherwise by a suitably qualified specialist.
Chemical Spill Emergency		
Major Hydrocarbon Spill	<ul style="list-style-type: none"> • Deploy spill control equipment to contain and isolate the spill • Control the source of the spill (i.e. close valves) if practicable and safe to do so. 	<ul style="list-style-type: none"> • Clean up spill material and dispose of appropriately. • Implement decontamination/ clean up procedures.

11. STAKEHOLDER AND COMMUNITY CONSULTATION

Metromix will undertake consultation with all relevant stakeholders to allow for consideration of all reasonable views and timely feedback to any issues that are raised. The approach to be taken would be constructive to ensure that the required environmental management of the Quarry's operation meets with expectations described in the *Environmental Assessment* and subsequent review of any approvals. All personnel will be responsible for ensuring that any issues raised are dealt with through the appropriate pathways as stated in the relevant Management Plans.

Relevant stakeholders include, but are not limited to the following.

- Department of Planning and Environment.
- Environment Protection Authority
- Office of Environment and Heritage.
- Department of Planning and Environment– Division of Resources and Energy.
- Department of Industry - Water - and Water NSW.
- Lake Macquarie City Council.
- Registered Indigenous groups.
- Community Consultative Committee.
- Local community.

Communication, consultation and information dissemination strategies will include the following.

- Periodic community newsletters and meetings.
- Regular meetings of the Community Consultative Committee.
- Individual meetings on request with surrounding landholders and interested community groups.
- Placement of all relevant environmental management monitoring and other relevant documents on the Company's website.

12. COMPETENCE TRAINING AND AWARENESS

All Metromix personnel and contractors and their employees will undergo site specific training incorporating environmental management awareness as part of the Quarry's Safety, Health and Environmental (SHE) program.

13. PUBLICATION OF MONITORING INFORMATION

All data required to demonstrate compliance with *PA Condition 5(11)* will be made publicly available on the Metromix website with a summary included in each *Annual Review*. Detailed information on the publication of specific data obtained for the Quarry is outlined within each respective Management Plan.

14. ROLES AND RESPONSIBILITIES

Roles	Responsibility
Quarry Manager	Accountable for the overall environmental performance of the Quarry, including the following. <ul style="list-style-type: none"> • Key performance outcomes of this Strategy. • Evaluation of Compliance. • Corrective and Preventative Actions. • Incident Reporting. • Dispute Resolution. • Review of this Strategy. • Consultation Strategies. • Emergency preparation, response and investigation.
Quarry Supervisor	Ensure the implementation of this Strategy, including the following. <ul style="list-style-type: none"> • Ensure employees are competent through training and awareness programs. • Monitoring. • Corrective Action and Preventative Action in consultation with the Quarry Manager. • Consultation Strategies. • Complaints management.
All personnel	Ensure compliance with this EMS and other Management Plans.

15. STRATEGY REVIEW

In accordance with *Condition 5(4)* of PA 10_0183 MOD 1, this Strategy will be reviewed and, if required, revised within 3 months of:

- An annual review under *Condition 5(4)*;
- an incident report under *Condition 5(7)*;
- an audit report under *Condition 5(9)*; and
- any modifications to PA 10_0183 MOD 1 in general.

This review will include the adequacy of strategies, plans and programs as required under the Project Approval. Recommendation for appropriate measures or action to improve the environmental performance of the Project and or any assessment, plan or program will be incorporated into this Strategy.

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Appendix 1

Project Approval

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Project Approval

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

As delegate of the Minister for Planning and Infrastructure, I approve the project application referred to in **Schedule 1**, subject to the conditions in **Schedules 2 to 5**.

These conditions are required to:

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

Sam Haddad
Director-General

Sydney

2013

SCHEDULE 1

Application Number:	10_0183
Proponent:	Metromix Pty Limited
Approval Authority:	Minister for Planning and Infrastructure
Land:	Lot 1 DP 224037 Lot 2 DP 224037
Project:	Teralba Quarry Extension

Red type represents March 2018 modification

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DEFINITIONS

Aboriginal item or object	Has the same meaning as in the <i>National Parks and Wildlife Act 1974</i>
AM peak period	7:30 am to 9 am weekdays
Annual review	The review required by condition 4 of <i>Schedule 5</i>
BCA	Building Code of Australia
CCC	Community Consultative Committee
Conditions of this approval	Conditions contained in <i>Schedules 1 to 5</i> inclusive
Council	Lake Macquarie City Council
CPI	Australian Bureau of Statistics Consumer Price Index
Dol Water	Department of Industry – Crown Lands and Water
Department	Department of Planning and Environment
DPI	NSW Department of Primary Industries
DRG	Division of Resources and Geoscience within the Department
EA	Environmental Assessment of the project titled <i>Environmental Assessment for the Teralba Quarry Extensions, Major Project Application No. 10_0183</i> , prepared by RW Corkery & Co Pty Limited and dated November 2011; <i>Teralba Quarry Extensions Response to Submissions</i> , prepared by RW Corkery & Co Pty Limited and dated June 2012; <i>Risk Review of Current and Planned Operations at Teralba Quarry for Stand-off Distances, Gases and Spontaneous Combustion</i> , prepared by Mining Operations Services Pty Ltd and dated January 2013; <i>Re: Modified Noise Modelling</i> prepared by Spectrum Acoustics dated 30 January 2013; <i>Annexure 9 Further Information on the Biodiversity Offset for the Teralba Quarry Extensions</i> dated August 2012; and <i>Re: Teralba Quarry Extensions – Traffic Assessment</i> dated 27 August 2012.
EA (Mod 1)	Environmental Assessment titled <i>Environmental Assessment of Modification 1 for Project Approval 10_0183 for the Teralba Quarry</i> prepared by RW Corkery & Co Pty Limited and dated December 2017; <i>Re: Teralba Quarry - Response to Submissions for the Proposed Modification to Project Approval 10_0183</i> , prepared by RW Corkery & Co Pty Limited and dated 15 February 2018; and the <i>Re: Teralba Quarry – Additional Information Request for the Proposed Modification to Project Approval 10_0183</i> , prepared by RW Corkery & Co Pty Limited and dated 21 February 2018.
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 <i>POEO Act</i>
Extraction Areas	The Southern, Southern Extension, Mid Pit and Northern Extension Extraction Areas shown on Figure 1 in Appendix 1
Feasible	Means what is possible and practicable under the circumstances
Haulage routes	The transport routes (see also Appendix 4) along which quarry products may be hauled from the site: <ul style="list-style-type: none"> • Route 1 – Northwestern Corridor: westwards along Rhondda Road, and then northwards along Wakefield Road and Northville Road to George Booth Drive; • Route 2 – Southwestern Corridor: westwards along Rhondda Road, and then southwards along Wakefield Road to the F3 Freeway; • Route 3 – Northeastern Corridor: northeast along Railway Street, Teralba, crossing the railway line, then southwards along York Street Teralba, then north-easterly along Five Islands Road to either The Esplanade or Lake Road; and • Route 4 – Southeastern Corridor: northeast along Railway Street, Teralba, crossing the railway line, then southwards along York Street Teralba and Toronto Road
Incident	An occurrence or set of circumstances that:

	<ul style="list-style-type: none"> causes or threatens to cause material harm to the environment; and/or exceeds the limits or performance measures/criteria in this approval
km	kilometres
Land	As defined in 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 approval 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 Land Titles Office at the date of this approval
m AHD	metres Australian Height Datum
Material harm to the environment	Is unauthorised harm that: <ul style="list-style-type: none"> involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment)
Minister	Minister for Planning, or delegate
Minor	Not very large, important or serious
Negligible	Small and unimportant, such as to be not worth considering
NOW	NSW Office of Water, within the Department of Primary Industries
OEH	NSW Office of Environment and Heritage
Privately-owned land	Land that is not owned by a public agency or the Proponent (or its subsidiary)
PM peak period	4:30 pm to 6:00 pm weekdays
POEO Act	Protection of the Environment Operations Act 1997
Project	The project as described in the documents listed in condition 2A of Schedule 2
Project Layout	The plans at Appendix 1 and Appendix 2 of this approval
Proponent	Metromix Pty Limited, or any other person who seeks to carry out the development approved under this approval
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 carried out on the site and the associated removal and emplacement of vegetation, topsoil and overburden
Quarry products	Includes all saleable quarry products, but excludes tailings, other wastes and rehabilitation material
Reasonable	Reasonable relates to the application of 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 project to a good condition, ensuring that it is safe, stable and non-polluting and appropriately revegetated
RMS	Roads and Maritime Services
Secretary	Planning Secretary under the Environmental Planning and Assessment Act 1979, or nominee
Statement of commitments	The information reproduced in Appendix 3 of this approval
Site	The land listed under "Land" in Schedule 1

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.

TERMS OF APPROVAL

2. The Proponent, in acting on this approval, must carry out the project:
 - (a) in compliance with the conditions of this approval;
 - (b) in accordance with the statement of commitments; and
 - (c) in accordance with all written directions of the Secretary.

- 2A. The Proponent, in acting on this approval, must carry out the project:
 - (a) generally in accordance with the EA;
 - (b) generally in accordance with the EA (Mod 1); and
 - (c) generally in accordance with the project layout.

Notes:

- The general layout of the project is shown in Appendix 1 and Appendix 2.
- The statement of commitments is reproduced in Appendix 3.

3. If there is any inconsistency between the documents identified in condition 2A, 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.
4. Consistent with the requirements of this approval, the Secretary may make written directions to the Proponent in relation to:
 - (a) the content of any strategy, study, system, plan, program, review, audit, notification, report or correspondence submitted under or otherwise made in relation to this approval, including those that are required to be, and have been, approved by the Secretary; and
 - (b) the implementation of any actions or measures contained in any such document referred to in (a) above.
- 4A. The Proponent must comply with any reasonable requirement/s of the Secretary arising from the Department's assessment of:
 - (a) any strategies, plans, programs, reviews, audits, reports or correspondence submitted in accordance with this approval (including any stages of these documents);
 - (b) any reviews, reports or audits commissioned by the Department regarding compliance with this approval; and
 - (c) the implementation of any actions or measures contained in these documents.

COMPLIANCE

- 4B. The Proponent must ensure that all employees, contractors and sub-contractors are made aware of, and instructed to comply with, the conditions of this approval relevant to activities they carry out in respect of the project.

LIMITS ON APPROVAL

Quarrying Operations

5. The Proponent may carry out quarrying operations on the site until 31 December 2038.

Note: Under this approval, the Proponent is required to rehabilitate the site and carry out additional undertakings to the satisfaction of the Secretary. Consequently, this approval will continue to apply in all other respects other

than the right to conduct quarrying operations until the rehabilitation of the site and those undertakings have been carried out to a satisfactory standard.

Extractive Material Limits

6. The Proponent **must** not carry out quarrying operations below 20 m AHD in the Southern Extension Area or below 24 m AHD in the Mid Pit Extraction and Northern Extension Areas.

Note: This condition does not apply to the construction of any bores approved by NOW or pollution and sediment control structures described in the EA.

7. The Proponent **must** not extract more than 1.2 million tonnes of extractive materials from the site in any calendar year.

Extractive Material Transport

8. The Proponent **must** not:
- (a) transport more than 1 million tonnes of quarry products from the site in any calendar year; or
 - (b) dispatch more than 326 laden trucks from the site on any day; or
 - (c) dispatch more than 241 laden trucks per day or 20 per hour westwards along Rhondda Road;
 - (d) dispatch more than 85 laden trucks per day or 8 per hour eastwards through Teralba;
 - (e) dispatch laden trucks for travel through Teralba between 6 pm and 6 am; or
 - (f) receive unladen trucks via the railway street entrance between 6 pm and 7 am.
9. The Proponent **must** limit the total hourly truck dispatch rates from the site to the levels shown in Table 1.

Table 1 – Truck Dispatch Hours

Dispatch Period	Maximum Hourly Dispatch Rate
6:00 am – 7:00 am	Up to 28 loaded trucks
7:00 am – 6:00 pm	Up to 20 loaded trucks
6:00 pm – 5:00 am	Up to 6 loaded trucks
5:00 am – 6:00 am	Up to 12 loaded trucks

Note: Dispatch times and maximum hourly rates westwards along Rhondda Road or eastwards through Teralba are further limited by condition 8 above.

Receival of Concrete, Virgin Excavated Natural Material and Excavated Natural Material

10. The Proponent **must** not receive on site more than 120 tonnes of recycled concrete per day or stockpile more than 2,500 tonnes of concrete material on the site.
11. The Proponent **must** not receive on site more than 100,000 tonnes of virgin excavated natural material or excavated natural material in any calendar year.

SURRENDER OF CONSENTS

12. By the end of December 2013, or as otherwise agreed by the **Secretary**, the Proponent **must** surrender the development consent (DA 130/42) for existing operations on the site in accordance with Section 104A of the EP&A Act.

Note: The conditions or other requirements of this project approval do not prevent the continued carrying out of development which may be undertaken pursuant to DA 130/42, prior to the surrender of that consent.

STRUCTURAL ADEQUACY

13. The Proponent **must** ensure that any new buildings and structures, and any alterations, or additions to existing buildings and structures, are constructed:

- a) in accordance with the relevant requirements of the BCA; and
- b) to the satisfaction of the **Subsidence Advisory NSW**.

Notes:

- Under *Part 4A of the EP&A Act*, the Proponent 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 project.
- Under Section 15 of the *Mine Subsidence Compensation Act 1961* the Proponent is required to obtain approval from the **Subsidence Advisory NSW** for the construction, erection or alteration of any improvements on the site.

DEMOLITION

14. The Proponent **must** ensure that all demolition work on site is carried out in accordance with AS 2601-2001: *The Demolition of Structures*, or its latest version.

PROTECTION OF PUBLIC INFRASTRUCTURE

15. The Proponent **must**:
- (a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the project; and
 - (b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the project.

PLANNING AGREEMENT

16. Within 12 months of the date of this approval, unless otherwise agreed by the **Secretary**, the Proponent **must** enter into a planning agreement with the Council in accordance with Division 6 of Part 4 of the EP&A Act that provides for payment to the Council for road maintenance levies.

The agreement must include provision for those matters set out in condition 17 below.

If there is any dispute between the Proponent and Council relating to the preparation or implementation of the planning agreement, then either party may refer the matter to the **Secretary** for resolution.

ROAD MAINTENANCE

17. During the life of the project, for each calendar year, the Proponent **must** pay Council \$0.066 per tonne per kilometre for every tonne of quarry products transported from the site on roads for which Council is liable for road maintenance funding. Each payment must be:
- (a) based on weighbridge records of the quantity of quarry products transported from the site;
 - (b) paid by the date required by the invoice issued by Council; and
 - (c) increased over the life of the project in accordance with the CPI.

OPERATION OF PLANT AND EQUIPMENT

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

STAGED SUBMISSION OF ANY STRATEGY, PLAN OR PROGRAM

19. With the approval of the **Secretary**, the Proponent may submit any strategy, plan or program required by this approval on a progressive basis.

Notes:

- *While any strategy, plan or program may be submitted on a progressive basis, the Proponent will need to ensure that the existing operations on site are covered by suitable strategies, plans or programs at all times; and*
- *If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program must clearly describe the specific stage to which the strategy, plan or program applies, the relationship of this stage to any future stages, and the trigger for updating the strategy, plan or program.*

PRODUCTION DATA

20. The Proponent **must**:
- (a) provide annual quarry production data to **DRG** using the standard form for that purpose; and
 - (b) include a copy of this data in the Annual Review (see condition 4 of **Schedule 5**).

SCHEDULE 3 ENVIRONMENTAL PERFORMANCE CONDITIONS

IDENTIFICATION OF APPROVED LIMITS OF EXTRACTION

1. Prior to carrying out quarrying operations under this approval, the Proponent **must**:
 - (a) engage a registered surveyor to mark out the boundaries of the approved limits of extraction within the Extraction Areas; and
 - (b) submit a survey plan of these boundaries to the **Secretary**.
2. While ever quarrying operations are being carried out, the Proponent **must** ensure that these boundaries are clearly marked at all times in a permanent manner that allows operating staff and inspecting officers to clearly identify the limits of extraction within the Southern, Southern Extension, Mid Pit and Northern Extension Extraction Areas.

EXTRACTION MANAGEMENT

Operating Conditions

3. The Proponent must ensure that:
 - (a) the underlying historical coal workings within the Great Northern coal seam pose not greater than a negligible risk to the safety of quarry workers, including risks from sudden unplanned collapses, release of noxious gases or explosion of flammable gases; and
 - (b) quarrying operations pose not greater than a negligible risk to the heating or combustion of the underlying historical coal workings within the Great Northern coal seam.

Lower Level Extraction Management Plan

4. The Proponent **must** prepare a Lower Level Extraction Plan for all extraction activities within 17.5 vertical metres of historical coal workings within the Great Northern coal seam, to the satisfaction of the **Secretary**. This plan must:
 - (a) be submitted for approval to the **Secretary** prior to undertaking any such quarrying operations and within 12 months of the date of this approval;
 - (b) be prepared by suitably qualified persons approved by the **Secretary**;
 - (c) provide for the achievement of the measures set out in condition 3 above;
 - (d) describe the measures that would be implemented to ensure:
 - best management practice quarrying operations are being employed on site;
 - individual responsibilities of workers, contractors and management are detailed and understood; and
 - compliance with the relevant conditions of this approval;
 - (e) include a Spontaneous Combustion Management Plan, which has been prepared in consultation with **DRG** and Oceanic Coal Pty Ltd, to manage the potential risks and impacts of spontaneous combustion or heating of coal, and which:
 - includes a detailed assessment, of the risks of spontaneous combustion and subsurface heating for each of the existing and proposed Extraction Areas;
 - clearly **identifies** responsibilities to address management of spontaneous combustion and subsurface heating risks, for both day to day operations and long term management; and
 - includes appropriate short and long term contingency plans.

The Proponent must implement the plan as approved by the Secretary.

NOISE

Noise Criteria

5. The Proponent **must** ensure that the noise generated by the project does not exceed the criteria in Table 2 at any residence on privately-owned land.

Table 2: Noise criteria dB(A)

Location	Day Shoulder 6-7 am	Day 7 am – 6 pm	Evening 6 – 10 pm	Night 10 pm – 6 am	
	L _{Aeq} (15 min)	L _{Aeq} (15 min)	L _{Aeq} (15 min)	L _{Aeq} (15 min)	L _{A1} (1 min)
A	38	38	37	35	45
B	42	46	36	35	45
C	42	42	35	35	45
D, E, G, H, I	35	35	35	35	45
F	37	38	38	35	45

Notes:

- Receiver locations are shown in Figure 2 Appendix 1.
- Noise generated by the project is to be measured in accordance with the relevant requirements and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy.

However, these criteria do not apply if the Proponent has a written agreement with the relevant landowner to exceed the criteria, and the Proponent has advised the Department in writing of the terms of this agreement.

Hours of Operation

6. The Proponent **must** comply with the operating hours set out in Table 3.

Table 3: Operating Hours

Day	Receipt of Concrete or Virgin Excavated Natural Material	Loading and Dispatch of Quarry Trucks	Extraction and Processing Operations
Monday – Friday	7 am to 5 pm	4 am Monday to midnight Friday	7 am to 7 pm
Saturday	7 am to 2 pm	midnight Friday to 6 pm Saturday	7 am to 2 pm
Sundays and Public Holidays	None	None	None

Note: Maintenance activities may occur at any time provided they are inaudible at privately-owned residences.

Operating Conditions

7. The Proponent **must**:
- implement best practice noise management to minimise the construction, operational and traffic noise of the project;
 - minimise the noise impacts of the project during meteorological conditions when the noise limits in this approval do not apply;
 - maintain the effectiveness of any noise suppression equipment on plant at all times and ensure defective plant is not used operationally until fully repaired;
 - regularly assess noise monitoring data and relocate, modify, and/or stop operations on site to ensure compliance with the relevant conditions of this approval; and
- to the satisfaction of the **Secretary**.

Noise Management Plan

8. The Proponent **must** prepare a Noise Management Plan for the project to the satisfaction of the **Secretary**. This plan must:
- be submitted for approval to the **Secretary** within 4 months of the date of this approval;
 - describe the measures that would be implemented to ensure:
 - best management practice is being employed on site;
 - the noise impacts of the project are minimised during any meteorological conditions when the noise limits in this approval do not apply; and
 - compliance with the relevant conditions of this approval;
 - describe the proposed noise management system in detail; and
 - include a monitoring program that:

- is capable of regularly evaluating the performance of the project, including noisy individual items of plant, such as haulage trucks and the bulldozer;
- includes a protocol for determining any exceedances of the relevant conditions in this approval at locations listed in Table 2; and
- evaluates and reports on the effectiveness of the noise management system on site.

The Proponent must implement the plan as approved by the Secretary.

BLASTING

Blasting Criteria

9. The Proponent **must** ensure that the blasting on the site does not cause exceedances of the criteria in Table 4.

Table 4: Blasting criteria

Location	Airblast overpressure (dB(Lin Peak))	Ground vibration (mm/s)	Allowable exceedance
Any residence on privately owned land, or any public infrastructure	120	10	0%
	115	5	5% of the total number of blasts over a period of 12 months

However, these criteria do not apply if the Proponent has a written agreement with the relevant owner or infrastructure provider/owner, and the Proponent has advised the Department in writing of the terms of this agreement.

Blasting Hours

10. The Proponent **must** only carry out blasting on site between 10 am and 4 pm Monday to Friday inclusive. No blasting is allowed on weekends or public holidays, or at any other time without the written approval of **Secretary**.

Blasting Frequency

11. The Proponent **must** not carry out more than 1 blast a day on site, unless an additional blast is required following a blast misfire.

Note: A blast may involve a number of explosions within a short period, typically less than two minutes.

Property Inspections

12. If the Proponent receives a written request from the owner of any privately-owned land within 500 m of proposed blasting for a property inspection to establish the baseline condition of any buildings and/or structures on his/her land, or to have a previous property inspection report updated, then within 2 months of receiving this request the Proponent **must**:
- commission a suitably qualified, experienced and independent person, whose appointment has been approved by the **Secretary**, to:
 - establish the baseline condition of any buildings and/or structures on the land, or update the previous property inspection report; and
 - identify any measures that should be implemented to minimise the potential blasting impacts of the project on these buildings and/or structures; and
 - give the landowner a copy of the new or updated property inspection report.

Property Investigations

13. If the owner of any privately-owned land claims that the buildings and/or structures on his/her land have been damaged as a result of blasting on site, then within 2 months of receiving this claim in writing from the landowner the Proponent **must**:
- commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties, to investigate the claim; and

- (b) give the landowner a copy of the property investigation report.

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

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

Operating Conditions

14. During blasting operations, the Proponent **must**:
- (a) implement best management practice to:
 - protect the safety of people and livestock in the surrounding area;
 - protect public or private infrastructure/property in the surrounding area from any damage; and
 - minimise the dust and fume emissions of any blasting; and
 - (b) operate a suitable system to enable the public to get up-to-date information on the proposed blasting schedule on site, to the satisfaction of the **Secretary**.
15. The Proponent **must** not undertake blasting within 500 metres of:
- (a) any public road without the approval of Council; or
 - (b) any land outside the site not owned by the Proponent, unless:
 - the Proponent has a written agreement with the relevant landowner to allow blasting to be carried out closer to the land, and the Proponent has advised the Department in writing of the terms of this agreement, or
 - the Proponent has:
 - demonstrated to the satisfaction of the **Secretary** that the blasting can be carried out closer to the land without compromising the safety of the people or livestock on the land, or damaging the buildings and/or structures on the land; and
 - updated the Blast Management Plan to include the specific measures that would be implemented while blasting is being carried out within 500 metres of the land.

Blast Management Plan

16. The Proponent **must** prepare a Blast Management Plan for the project to the satisfaction of the **Secretary**. This plan must:
- (a) be submitted to the **Secretary** for approval within 4 months from the date of project approval;
 - (b) be prepared in consultation with the Council and interested members of the local community potentially affected by blasting operations;
 - (c) describe the measures that would be implemented to ensure:
 - best management practice is being employed; and
 - compliance with the relevant conditions of this approval;
 - (d) include a road closure management plan for blasting within 500 metres of a public road, that has been prepared in consultation with Council;
 - (e) include a specific blast fume management protocol to demonstrate how emissions will be minimised including risk management strategies if blast fumes are generated; and
 - (f) include a monitoring program for evaluating the performance of the project including:
 - compliance with the applicable criteria; and
 - minimising fume emissions from the site.

The Proponent must implement the plan as approved by the Secretary.

AIR QUALITY

Air Quality Criteria

17. The Proponent **must** ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the project do not exceed the criteria in Tables 5 to 7 at any residence on privately-owned land, or on more than 25% of any privately-owned land.

Table 5: Long-Term Impact Assessment Criteria for Particulate Matter

<i>Pollutant</i>	<i>Averaging period</i>	<i>^d Criterion</i>
Total suspended particulates (TSP)	Annual	^a 90 µg/m ³
Particulate matter < 10 µm (PM ₁₀)	Annual	^a 30 µg/m ³

Table 6: Short Term Impact Assessment Criteria for Particulate Matter

<i>Pollutant</i>	<i>Averaging period</i>	<i>^d Criterion</i>
Particulate matter < 10 µm (PM ₁₀)	24 hour	^a 50 µg/m ³

Table 7: Long-Term Impact Assessment Criteria for Deposited Dust

<i>Pollutant</i>	<i>Averaging period</i>	<i>Maximum increase in deposited dust level</i>	<i>Maximum total deposited dust level</i>
^c Deposited dust	Annual	^b 2 g/m ² /month	^a 4 g/m ² /month

Notes to Tables 5-7:

- ^a Total impact (ie incremental increase in concentrations due to the project plus background concentrations due to all other sources);
- ^b Incremental impact (ie incremental increase in concentrations due to the project on its own);
- ^c 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.
- ^d Excludes extraordinary events such as bushfires, prescribed burning, dust storms, sea fog, fire incidents, illegal activities or any other activity agreed by the **Secretary** in consultation with EPA.

Greenhouse Gas Emissions

18. The Proponent **must** implement all reasonable and feasible measures to minimise the release of greenhouse gas emissions from the site.

Operating Conditions

19. The Proponent **must**:
- implement best management practice to minimise the dust emissions of the project;
 - regularly assess air quality monitoring data and relocate, modify, and/or stop operations on site as may be required to ensure compliance with the relevant conditions of this approval;
 - minimise the air quality impacts of the project during adverse meteorological conditions and extraordinary events (see Note d to Tables 5-7 above);
 - minimise any visible off-site air pollution;
 - minimise surface disturbance of the site **and undertake progressive rehabilitation of the site; and**
 - monitor and report on compliance with the relevant air quality conditions in this approval, to the satisfaction of the Secretary.**

Air Quality Management Plan

20. The Proponent **must** prepare an Air Quality Management Plan for the project to the satisfaction of the **Secretary**. This plan must:
- be prepared in consultation with Council, and submitted for approval to the **Secretary** within 4 months of the date of this approval;
 - describes the measures that would be implemented to ensure:
 - best management practice is employed;
 - the air quality impacts of the project are minimised during adverse meteorological conditions and extraordinary events; and
 - compliance with the relevant conditions of this approval;

- (c) describes the proposed air quality management system; and
- (d) includes an air quality monitoring program that:
 - is capable of evaluating the performance of the project;
 - includes a protocol for determining any exceedances of the relevant conditions of approval;
 - adequately supports the air quality management system; and
 - evaluates and reports on the adequacy of the air quality management system.

The Proponent must implement the plan as approved by the Secretary.

METEOROLOGICAL MONITORING

21. For the life of the project, the Proponent **must** ensure that there is a suitable meteorological station operating in the vicinity of the site that:
- complies with the requirements in the *Approved Methods for Sampling of Air Pollutants in New South Wales* guideline; and
 - is capable of continuous real-time measurement of temperature lapse rate, in accordance with the *NSW Industrial Noise Policy*, or as otherwise approved by EPA.

SOIL & WATER

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

Water Supply

22. The Proponent **must** ensure it has sufficient water during all stages of the project, and if necessary, adjust the scale of quarrying operations on site to match its available supply.

Surface Water Discharges

23. The Proponent **must** ensure that all surface water discharges from the site comply with the discharge limits in any EPL which regulates water discharges from the site, or with section 120 of the POEO Act.

On-Site Sewage Management

24. The Proponent **must** manage on-site sewage to the satisfaction of Council and the EPA.

Storage of Chemicals & Petroleum Products

25. The Proponent **must** ensure that all chemicals and/or petroleum products on site are held in appropriately bunded areas with impervious flooring and sufficient capacity to contain 110% of the largest container stored within the bund, and in accordance with Australian Standard AS1940-2004, *The Storage and Handling of Flammable and Combustible Liquids*. The flooring and bund(s) **must** be designed in accordance with:
- the requirements of relevant Australian Standards; and
 - DECC's *Storing and Handling Liquids: Environmental Protection – Participants Manual*.

Water Management Plan

26. The Proponent **must** prepare a Water Management Plan for the project to the satisfaction of the **Secretary**. This plan must be prepared in consultation with Council and NOW by suitably qualified and experienced person/s whose appointment has been approved by the **Secretary**, and be submitted to the **Secretary** for approval within 6 months of the date of this approval and prior to any extraction activities within the Northern Extension area.

In addition to the standard requirements for management plans (see condition 3 of **Schedule 5**), this plan must include a:

- (a) Site Water Balance that:
 - includes details of:
 - sources and security of water supply, including contingency planning;

- water use on site;
 - water management on site;
 - reporting procedures, including comparisons of the site water balance each calendar year; and
 - describes the measures that would be implemented to minimise clean water use on site;
- (b) Surface Water Management Plan, that includes:
- detailed baseline data on surface water flows and quality in the watercourses that could be affected by the project;
 - a detailed description of the surface water management system on site, including the:
 - clean water diversion systems;
 - erosion and sediment controls; and
 - water storages;
 - design objectives and performance criteria for proposed:
 - erosion and sediment control structures;
 - water storages; and
 - control of water pollution from rehabilitated areas of the site;
 - performance criteria, including trigger levels for investigating any potentially adverse impacts, for surface water quality of local watercourses and Lake Macquarie;
 - a program to monitor:
 - the effectiveness of the water management system;
 - surface water flows and quality in local watercourses and Lake Macquarie; and
 - ecosystem health of local watercourses and Lake Macquarie;
 - a plan to respond to any exceedances of the performance criteria, and mitigate and/or offset any adverse surface water impacts of the project; and
 - a detailed review the dirty water management system to:
 - determine whether the capacity, integrity, retention time and management of the system are sufficient to ensure that water discharged from the site meets the performance criteria and propose any upgrades necessary to meet these criteria;
 - assess appropriate options to improve storage and retention times in accordance with *The Blue Book - Managing Urban Stormwater (MUS): Soils and Construction (Landcom)*; and
- (c) Groundwater Management Plan, that includes:
- detailed baseline data on groundwater yield and quality in the area, that could be affected by the project;
 - groundwater assessment criteria, including trigger levels for investigating any potentially adverse groundwater impacts;
 - a program to monitor:
 - surface water inflows into the groundwater system beneath the site;
 - the impacts of the project on:
 - the local coal seam aquifer;
 - any groundwater bores on privately-owned land that could be affected by the project; and
 - groundwater dependent ecosystems; and
 - seepage/leachate from water storages or backfilled voids (including historical coal workings) on site; and
 - a plan to respond to any exceedances of the groundwater assessment criteria;

*Note: The **Secretary** may require the Proponent to implement upgrades and other changes identified under paragraph (b), in accordance with condition 4 of **Schedule 2**.*

The Proponent must implement the plan as approved by the Secretary.

VISUAL

Protection of Ridgelines

27. The Proponent **must** ensure that any clearing of visually prominent ridgeline vegetation is done in a progressive manner, so as to provide for a maximum of 6 months of future quarrying operations.
28. The Proponent **must** ensure that the:

- (a) eastern facing quarry benches of the Southern Extension are vegetated with native endemic understory species and trees as soon as practicable following the completion of extraction of those benches; and
- (b) revegetation of the quarry benches is managed to ensure that a tree canopy is regenerated, as soon as practicable, to be consistent with and visually integrated into the surrounding tree canopy, to the satisfaction of the **Secretary**.

Operating Conditions

29. The Proponent **must**
- (a) implement all reasonable and feasible measures to minimise the visual impacts and any off-site lighting impacts of the project; and
 - (b) maintain and improve the effectiveness of the vegetated plantings on the quarry benches, over the life of the project.

Advertising Signage

30. The Proponent **must** not erect or display any advertising structure(s) or signs on the site without the written approval of the **Secretary**.

Note: This condition does not require approval for any business identification, traffic management, and/or safety or environmental signs.

TRANSPORT

Intersection Investigation and Wheel Wash

31. Within 6 months of the date of this approval the Proponent **must**:
- (a) commission a suitably qualified and experienced person endorsed by the **Secretary** to undertake a road safety audit report of the intersection of York Street and Anzac Parade in consultation with Council;
 - (b) submit the report and any recommendations to the **Secretary** for approval; and
 - (c) implement any recommendations of the road safety audit to upgrade the intersection of York Street and Anzac Parade to the satisfaction of Council.
32. The Proponent **must** install truck wheel wash facilities within 6 months of the date of this approval at all quarry exits and following such installation, must ensure that all trucks have their tyres and vehicles cleaned of mud, dirt and dust prior to exiting the site, so as to avoid tracking dirt onto public roads, to the satisfaction of the **Secretary**.

Operating Conditions

33. The Proponent **must** construct the tunnel and conveyor under Rhondda Road to the satisfaction of Council.
34. Within 6 months of the date of this approval, the Proponent **must** cease transporting quarry material by truck between the quarry pits.
35. The Proponent may only transport quarry products from the site on the designated Haulage Routes (see Appendix 4), except in circumstances where the final destination of the quarry products can only be accessed by other roads.
36. The Proponent **must** ensure that all heavy vehicles:
- (a) do not exceed an on-site speed limit of 30 km per hour;
 - (b) exiting the site to the east via the bottom gate (ie to Railway Street) during the Day Shoulder period do not exceed the on-site speed limit and minimise noise as far as reasonable between Railway Street and the end of the existing engineering works; and
 - (c) entering or leaving the site have their loads covered.

37. During the AM peak period and PM peak period, the Proponent **must** implement all reasonable and feasible measures to minimise project-related traffic delays and congestion at the intersection of Toronto and Five Islands Roads and along York Street, to the satisfaction of the **Secretary**.
38. Only trucks owned by the Proponent, its shareholders or approved contractors and fitted with airbag suspension may transport quarry products from the site between 6 pm and 6 am.

Maintenance

39. The Proponent **must** regularly maintain the pavement of the on-site road that connects to Railway Street to minimise dust generation and potholes, to the satisfaction of the **Secretary**.

Monitoring of Product Transport

40. The Proponent **must**:
- (a) keep accurate records of:
 - the amount of quarry products transported from the site (monthly and annually); and
 - all laden truck movements from the site (hourly, daily, weekly, monthly and annually); and
 - (b) publish these records on its website on a quarterly basis.

Road Signage

41. **Deleted.**
42. Prior to carrying out quarrying operations under this approval, the Proponent **must** install "Trucks entering" warning signs 200 metres either side of the quarry entrances on public roads.

Parking

43. The Proponent **must** provide sufficient parking on-site for all project-related traffic in accordance with Council's parking codes and in consultation with Council.

Transport Management Plan

44. The Proponent **must** prepare a Transport Management Plan for the project to the **Secretary**. This plan must:
- (a) be prepared by a suitably qualified traffic consultant in consultation with the RMS and Council, and submitted to the **Secretary** for approval within 4 months of the date of this approval;
 - (b) include a drivers' code of conduct for the project;
 - (c) describe the measures that would be implemented to ensure:
 - drivers are aware of potential safety issues along the haulage routes in particular near schools;
 - drivers of project-related vehicles comply with the drivers' code of conduct;
 - compliance with the relevant conditions of this approval; and
 - (d) include a program to monitor the effectiveness of the implementation of these measures.

The Proponent must implement the plan as approved by the Secretary.

BUSHFIRE MANAGEMENT

45. The Proponent **must**:
- a) ensure that the project is suitably equipped to respond to any fires on site; and
 - b) assist the Rural Fire Service, emergency services and National Parks and Wildlife Service as much as possible if there is a fire in the surrounding area.

WASTE

46. Prior to importing any Virgin Excavated Natural Material or excavated natural material to the site, the Proponent must obtain a 'resource recovery exemption' under the POEO Act and provide evidence of this approval to the Department.

47. The Proponent **must**:
- (a) minimise the waste generated by the project; and
 - (b) ensure that the waste generated by the project is appropriately stored, handled, and disposed of,
- to the satisfaction of the **Secretary**.
48. The Proponent **must** prepare a Waste Management Plan for the project to the satisfaction of the **Secretary**. This plan must:
- (a) be prepared in consultation with **DRG** and Council, and submitted to the **Secretary** for approval prior within 4 months of the date of this approval;
 - (b) identify the various waste streams of the project;
 - (c) estimate the volumes of waste material that would be generated by the project, including recycled concrete brought on-site;
 - (d) describe and justify the proposed strategy for disposing of this waste material, including recycled concrete brought on-site; and
 - (e) include a program to monitor the effectiveness of these measures.

The Proponent must implement the plan as approved by the Secretary.

ABORIGINAL HERITAGE

Heritage Management Plan

49. The Proponent **must** prepare a Heritage Management Plan for the project to the satisfaction of the **Secretary**. This plan must:
- (a) be prepared in consultation with Aboriginal stakeholders;
 - (b) be submitted to the **Secretary** for approval prior to carrying out any development within the Northern Extension area or within 6 months of the date of this approval;
 - (c) describe the measures that would be implemented for:
 - monitoring all new surface disturbance on site for unidentified Aboriginal objects;
 - managing the discovery of any human remains or previously unidentified Aboriginal objects on site; and
 - ensuring ongoing consultation with Aboriginal stakeholders in the conservation and management of any Aboriginal cultural heritage values on site.

The Proponent must implement the plan as approved by the Secretary.

- 49A. If any suspected Aboriginal object or place is identified on site, the Proponent must ensure that:
- (a) all work in the immediate vicinity of the suspected Aboriginal object or place ceases immediately;
 - (b) a 10 m buffer area around the suspected Aboriginal object or place is cordoned off; and
 - (c) OEH is contacted immediately.

Work in the immediate vicinity of the Aboriginal object or place may only recommence in accordance with the provisions of Part 6 of the *National Parks and Wildlife Act 1974*.

BIODIVERSITY AND REHABILITATION

Fauna Habitat

50. The Proponent **must** install 20 nest boxes for microbats, 20 nest boxes for Little Lorikeets and 30 nest boxes for Sugar Gliders. These boxes must be monitored and maintained regularly over the life of the project, and re-located or replaced if not used by targeted fauna for a period of 12 months.
51. The Proponent **must**, wherever practicable, avoid clearing hollow-bearing trees. If clearing a hollow-bearing tree cannot be avoided, then its removal must be offset with an additional and comparable habitat structure within the site.

Biodiversity Offset Strategy

52. The Proponent must retire biodiversity credits specified in conditions 54 to 56 of this schedule in accordance with the Biodiversity Offset Scheme of the *Biodiversity Conservation Act 2016*, to the satisfaction of the Secretary and OEH.
53. The Proponent must prepare and submit a Biodiversity Offset Strategy to the satisfaction of the Secretary. This strategy must:
- (a) be submitted for approval by the Secretary prior to 30 June 2018, or as otherwise agreed by the Secretary; and
 - (b) be prepared in accordance with the *Biodiversity Conservation Act 2016*; and
 - (c) provide for the retirement of biodiversity credits as specified in conditions 54 to 56 of this schedule.

The Proponent must implement the Biodiversity Offset Strategy to the satisfaction of the Secretary and OEH.

54. By 31 December 2018, unless otherwise approved by the Secretary, the Proponent must retire all biodiversity credits listed in Table 8 to the satisfaction of the Secretary and OEH.

Table 8: Biodiversity Credits to be retired by 31 December 2018

Credit Type	Offset Type	Number of Credits
Ecosystem Credits	PCT1589 'Spotted Gum – Broad-leaved Mahogany – Grey Gum grass – shrub open forest on Coastal Lowlands of the Central Coast'	670
Species Credits	Black-eyed Susan (<i>Tetradlea juncea</i>)	1103

55. Prior to any vegetation clearing in Southern Extension Stage 3 (see Figure 7 of Appendix 5) the Proponent must retire all biodiversity credits listed in Table 8a to the satisfaction of the Secretary and OEH.

Table 8a: Biodiversity credits to be retired prior to vegetation clearing in Southern Extension Stage 3

Credit Type	Offset Type	Number of Credits
Ecosystem Credits	PCT1589 - 'Spotted Gum – Broad-leaved Mahogany – Grey Gum grass – shrub open forest on Coastal Lowlands of the Central Coast'	171

56. Prior to any vegetation clearing in Northern Extension Stages 1, 2 or 3 (see Figure 7 of Appendix 5) the Proponent must retire all biodiversity credits listed in Table 8b to the satisfaction of the Secretary and OEH.

Table 8b: Biodiversity credits to be retired prior to vegetation clearing in Northern Extension Stages 1, 2 or 3

Credit Type	Offset Type	Number of Credits
Ecosystem Credits	PCT1589 - 'Spotted Gum – Broad-leaved Mahogany – Grey Gum grass – shrub open forest on Coastal Lowlands of the Central Coast'	502

Long Term Security of Offsets

57. Within 6 months of the approval of the Biodiversity Offset Strategy, or as otherwise agreed by the Secretary, the Proponent must make suitable arrangements for the long-term protection of any land identified in the Strategy, to the satisfaction of the Secretary.

Rehabilitation Objectives

58. The Proponent must rehabilitate the site to the satisfaction of the Secretary. This rehabilitation must be generally consistent with the proposed rehabilitation strategy in the EA and Appendix 6, and comply with the objectives in Table 9.

Table 9: Rehabilitation Objectives

Feature	Objective
Site (as a whole)	<ul style="list-style-type: none"> • Safe • Hydraulically and geotechnically stable • Non-polluting • Fit for the intended post-mining land use(s) • Final landform integrated with surrounding natural landforms as far as is reasonable and feasible • 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
Benched quarry walls	<ul style="list-style-type: none"> • Landscaped and revegetated utilising native tree and understorey species, ensuring that the tree canopy is restored and integrated with the surrounding canopy to minimise visual impacts
Quarry pit floors and silt ponds	<ul style="list-style-type: none"> • Landscaped and revegetated utilising native flora species and felled trees from clearing. • Revegetation not required for existing and proposed industrial areas
Other land affected by the project	<ul style="list-style-type: none"> • Restore ecosystem function, including maintaining or establishing self-sustaining eco-systems comprised of: <ul style="list-style-type: none"> ○ native endemic species ○ a landform consistent with Figure 8 (Appendix 6) and the surrounding environment

Progressive Rehabilitation

59. The Proponent 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.

Biodiversity and Rehabilitation Management Plan

60. The Proponent must prepare a Biodiversity and Rehabilitation Management Plan for the project to the satisfaction of the Secretary. This plan must:
- be prepared by a suitably qualified expert and in consultation with DRG, DPI and Council;
 - be submitted to the Secretary for approval within 12 months of the date of approval of Modification 1;
 - provide details of the conceptual final landform and associated land uses for the site;
 - describe how the implementation of the Biodiversity Offset Strategy would be integrated with the overall rehabilitation of the site;
 - describe the short, medium and long-term measures that would be implemented to:
 - manage remnant vegetation and habitat on site;
 - implement the Biodiversity Offset Strategy; and
 - ensure compliance with the rehabilitation objectives and progressive rehabilitation obligations in this approval;

- (f) include detailed performance and completion criteria for evaluating the performance of the Biodiversity Offset Strategy and the rehabilitation of the site (including progressive rehabilitation), including triggering remedial action (if necessary);
- (g) include a detailed description of the measures that would be implemented over the next 3 years, including the procedures to be implemented for:
 - ensuring compliance with the rehabilitation objectives and progressive rehabilitation obligations in this approval;
 - enhancing the quality of remnant vegetation and fauna habitat;
 - protecting and restoring native endemic vegetation and fauna habitat within any offset areas and rehabilitation areas;
 - 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 the biodiversity areas or rehabilitation area;
 - collecting and propagating seed;
 - ensuring minimal environmental consequences for the local *Tetratheca juncea* population;
 - protecting vegetation and fauna habitat outside the approved disturbance area on-site;
 - minimising the impacts on native fauna on site, including undertaking appropriate pre-clearance surveys;
 - controlling weeds and feral pests;
 - controlling erosion;
 - controlling access; and
 - bushfire management;
- (h) include a program to monitor the effectiveness of these measures, and progress against the performance and completion criteria;
- (i) identify the potential risks to successful implementation of the Biodiversity Offset Strategy and rehabilitation of the site, and include a description of the contingency measures that would be implemented to mitigate against these risks; and
- (j) include details of who would be responsible for monitoring, reviewing, and implementing the plan.

The Proponent must implement the plan as approved by the Secretary.

Rehabilitation Bond

61. Within 6 months of the approval of the Biodiversity and Rehabilitation Management Plan, the Proponent must lodge a Rehabilitation Bond with the Department to ensure that the rehabilitation of the site is implemented in accordance with the performance and completion criteria set out in the Biodiversity and Rehabilitation Management Plan and the relevant conditions of approval. The sum of the bond must be determined by:
- (a) calculating the cost of rehabilitating all disturbed areas of the site, taking into account the likely surface disturbance over the next 3 years of quarrying operations; and
 - (b) employing a suitably qualified quantity surveyor or other expert to verify the calculated costs to the satisfaction of the Secretary.

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

62. The Rehabilitation 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 and Rehabilitation Management Plan;
 - (b) the completion of an Independent Environmental Audit in which recommendations relating to the rehabilitation of the site have been made; or
 - (c) in response to a request by the Secretary.

Notes:

- If capital and other expenditure required by the Biodiversity and Rehabilitation Management Plan is largely complete, the Secretary may waive the requirement for lodgement of a bond in respect of the remaining expenditure.

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

Relocated Powerlines

63. The Proponent must ensure that any relocation of existing powerlines on-site does not cause greater than minor environmental consequences.

SCHEDULE 4 ADDITIONAL PROCEDURES

NOTIFICATION OF LANDOWNERS

1. As soon as practicable **and no longer than 7 days** after obtaining monitoring results showing an:
 - (a) exceedance of any relevant criteria in **Schedule 3**, the Proponent **must** notify affected landowners in writing of the exceedance, and provide regular monitoring results to each affected landowner until the project is again complying with the relevant criteria; and
 - (b) an exceedance of the relevant air quality criteria in **Schedule 3**, the proponent **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/or existing tenants of the land.

INDEPENDENT REVIEW

2. If an owner of privately-owned land considers the project 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 project 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 Proponent **must**:

- (a) commission a suitably qualified, experienced and independent expert, whose appointment has been approved by the **Secretary**, to:
 - consult with the landowner to determine his/her concerns;
 - conduct monitoring to determine whether the project is complying with the relevant criteria in **Schedule 3**; and
 - if the project is not complying with these criteria, then identify the 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.**
3. If the independent review determines that the project is complying with the relevant criteria in **Schedule 3**, then the Proponent may discontinue the independent review with the approval of the **Secretary**.
- If the independent review determines that the project is not complying with the relevant criteria in **Schedule 3**, then the Proponent **must**:
- (a) implement all reasonable and feasible mitigation measures, in consultation with the landowner and appointed independent expert, and conduct further monitoring until the project complies with the relevant criteria; or
 - (b) secure a written agreement with the landowner to allow exceedances of the relevant criteria, to the satisfaction of the **Secretary**.

SCHEDULE 5 ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING

ENVIRONMENTAL MANAGEMENT

Environmental Management Strategy

1. The Proponent **must** prepare an Environmental Management Strategy for the project to the satisfaction of the **Secretary**. This strategy must:
 - (a) be submitted to the **Secretary** for approval with 6 months of the date of this approval;
 - (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:
 - 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 during the course of the project;
 - respond to any non-compliance; and
 - respond to emergencies; and
 - (f) include:
 - **references to** any strategies, plans and programs approved under the conditions of this approval; and
 - a clear plan depicting all the monitoring required to be carried out under the conditions of this approval.

The Proponent must implement the strategy as approved by the Secretary.

Adaptive Management

2. The Proponent **must** assess and manage project-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 approval 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 Proponent 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.

Management Plan Requirements

3. The Proponent **must** ensure that the Management Plans required under this approval are prepared in accordance with any relevant guidelines, and include:
 - (a) detailed baseline data;
 - (b) a description of:
 - the relevant statutory requirements (including any relevant approval, licence or lease conditions);
 - any relevant limits or performance measures/criteria; and
 - the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures;
 - (c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;
 - (d) a program to monitor and report on the:

- impacts and environmental performance of the project; and
- effectiveness of any management measures (see (c) above);
- (e) a contingency plan to manage any unpredicted impacts and their consequences;
- (f) a program to investigate and implement ways to improve the environmental performance of the project over time;
- (g) a protocol for managing and reporting any:
 - incidents;
 - complaints;
 - non-compliances with statutory requirements; and
 - exceedances of the impact assessment criteria and/or performance criteria; and
- (h) a protocol for periodic review of the plan.

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

Evidence of Consultation

- 3A. Where conditions of this approval require consultation with an identified party, the Proponent must:
- (a) consult with the relevant party prior to submitting the subject document to the **Secretary** for approval; and
 - (b) provide details of the consultation undertaken, including:
 - the outcome of that consultation, matters resolved and unresolved; and
 - details of any disagreement remaining between the party consulted and the Proponent and how the Proponent has addressed any unresolved matters.

However, if the **Secretary** agrees, a strategy, plan or program may be prepared without consultation being undertaken with an identified party required under a condition of this approval.

Annual Review

4. By the end of March each year, the Proponent **must** review the environmental performance of the project to the satisfaction of the **Secretary**. This review must:
- (a) describe the development (including rehabilitation) that was carried out in the previous calendar year, and the development that is proposed to be carried out over the current calendar year;
 - (b) include a comprehensive review of the monitoring results and complaints records of the project over the previous calendar year, which includes a comparison of these results against:
 - the relevant statutory requirements, limits or performance measures/criteria;
 - the monitoring results of previous years; and
 - the relevant predictions in the **documents listed in condition 2A of Schedule 2**;
 - (c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;
 - (d) identify any trends in the monitoring data over the life of the project;
 - (e) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and
 - (f) describe what measures will be implemented over the current calendar year to improve the environmental performance of the project.

Revision of Strategies, Plans & Programs

5. Within 3 months of the submission of an:
- (a) annual review under condition 4 above;
 - (b) incident report under condition 7 below;
 - (c) audit report under condition 9 below; and
 - (d) any modifications to this approval,
- the Proponent **must** review, and if necessary revise, the strategies, plans, and programs required under this approval to the satisfaction of the **Secretary**.

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

Community Consultative Committee

6. The Proponent **must** establish and operate a Community Consultative Committee (CCC) for the project to the satisfaction of the **Secretary**. This CCC must be operated in general accordance with the **Department's Community Consultative Committee Guidelines for State Significant Developments, November 2016**, or its latest version), and be operating within four months of the date of this approval.

Notes:

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

REPORTING

Incident Reporting

7. The Proponent **must** immediately notify the **Secretary** (using the contact name, email address and phone number provided by the Department from time to time) and any other relevant agencies of any incident.
- 7B. Within 7 days of the date of the incident, the Proponent **must** provide the **Secretary** and any relevant agencies with a detailed report on the incident, and such further reports as may be requested. This report **must** include the time and date of the incident, details of the incident, measures implemented to prevent re-occurrence and **must** identify any non-compliance with this approval.

Regular Reporting

8. The Proponent **must** provide regular reporting on the environmental performance of the project on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this approval.

INDEPENDENT ENVIRONMENTAL AUDIT

9. Within a year of the commencement of development on site under this approval, and every 3 years thereafter, unless the **Secretary** directs otherwise, the Proponent **must** commission and pay the full cost of an Independent Environmental Audit of the project. This audit **must**:
 - (a) be conducted by suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the **Secretary**;
 - (b) include consultation with the relevant agencies;
 - (c) assess the environmental performance of the project and whether it is complying with the relevant requirements in this approval and any relevant EPL and/or Water License (including any assessment, plan or program required under these approvals);
 - (d) review the adequacy of any approved strategy, plan or program required under the these approvals; and
 - (e) recommend measures or actions to improve the environmental performance of the project, and/or any assessment, plan or program required under these approvals.
- Note: This audit team must be led by a suitably qualified auditor and include experts in any fields specified by the **Secretary**.*
10. Within 3 months of commissioning this audit, or as otherwise agreed by the **Secretary**, the Proponent **must** submit a copy of the audit report to the **Secretary**, together with its response to any recommendations contained in the audit report.

ACCESS TO INFORMATION

11. Within 4 months of the date of this approval, the Proponent **must**:
- (a) make the following information publicly available on its website:
 - the EA;
 - current statutory approvals for the project;
 - approved strategies, plans or programs;
 - a summary of the monitoring results of the project, which have been reported in accordance with the various plans and programs approved under the conditions of this approval;
 - a complaints register, updated on a quarterly basis;
 - minutes of CCC meetings;
 - copies of any annual reviews (over the last 5 years);
 - any independent environmental audit, and the Proponent's response to the recommendations in any audit; and
 - any other matter required by the **Secretary**; and
 - (b) keep this information up-to-date, to the satisfaction of the **Secretary**.

APPENDIX 1 PROJECT SITE & LAND REFERENCE PLAN

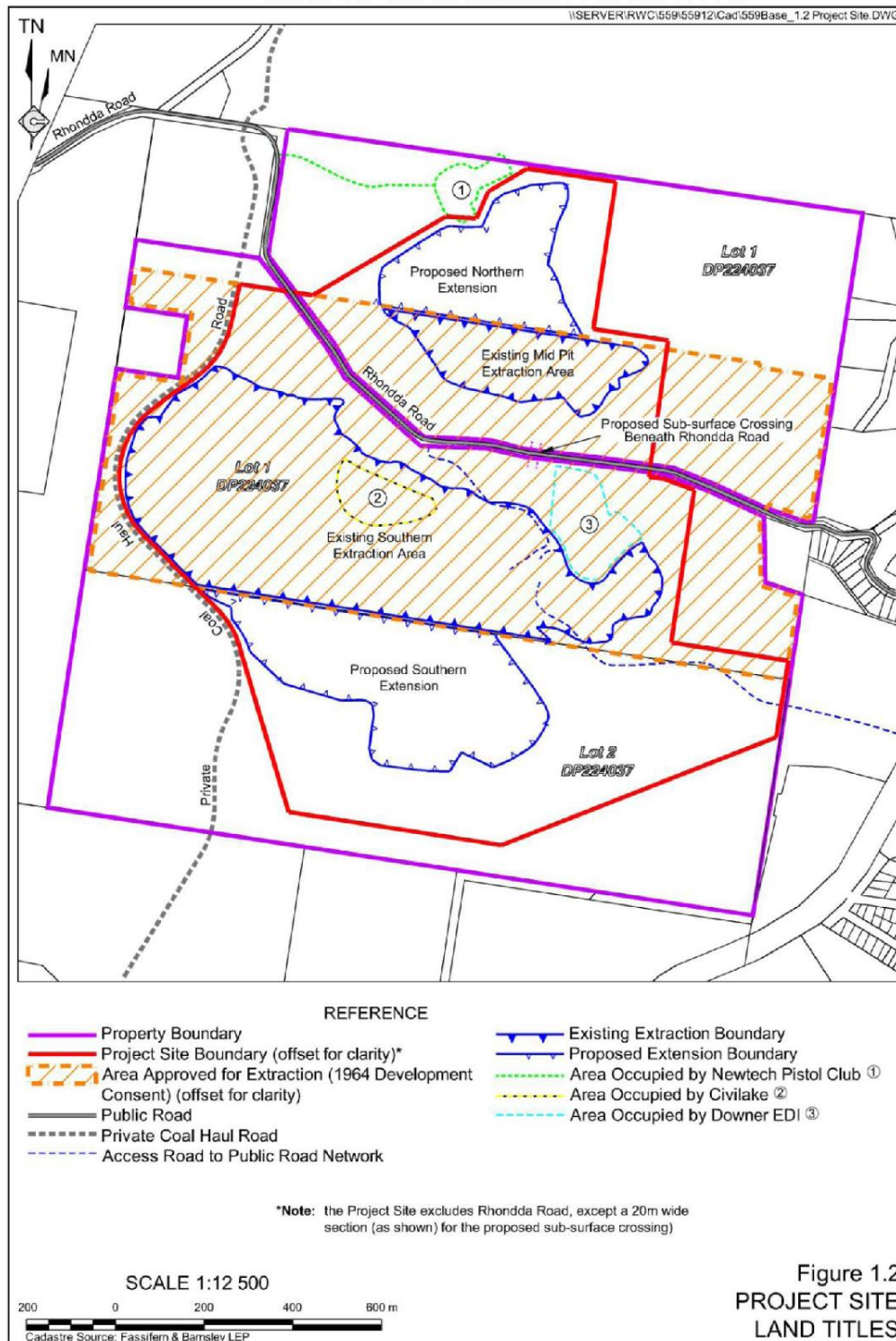
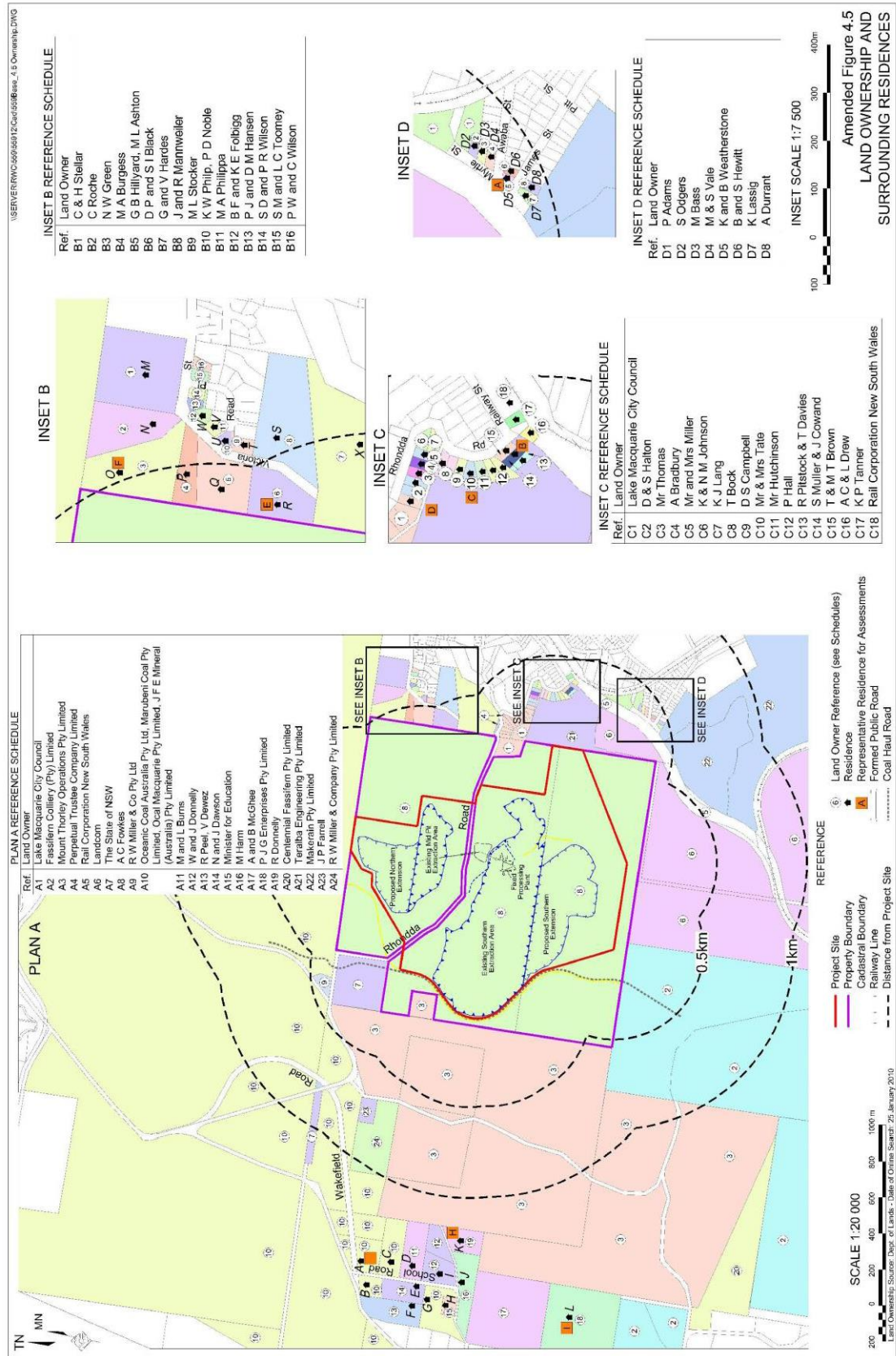


Figure 1: Property Descriptions (Lot and DP)



APPENDIX 2 PROJECT LAYOUT PLANS



Figure 3: Extraction Area Dimensions and Site Features

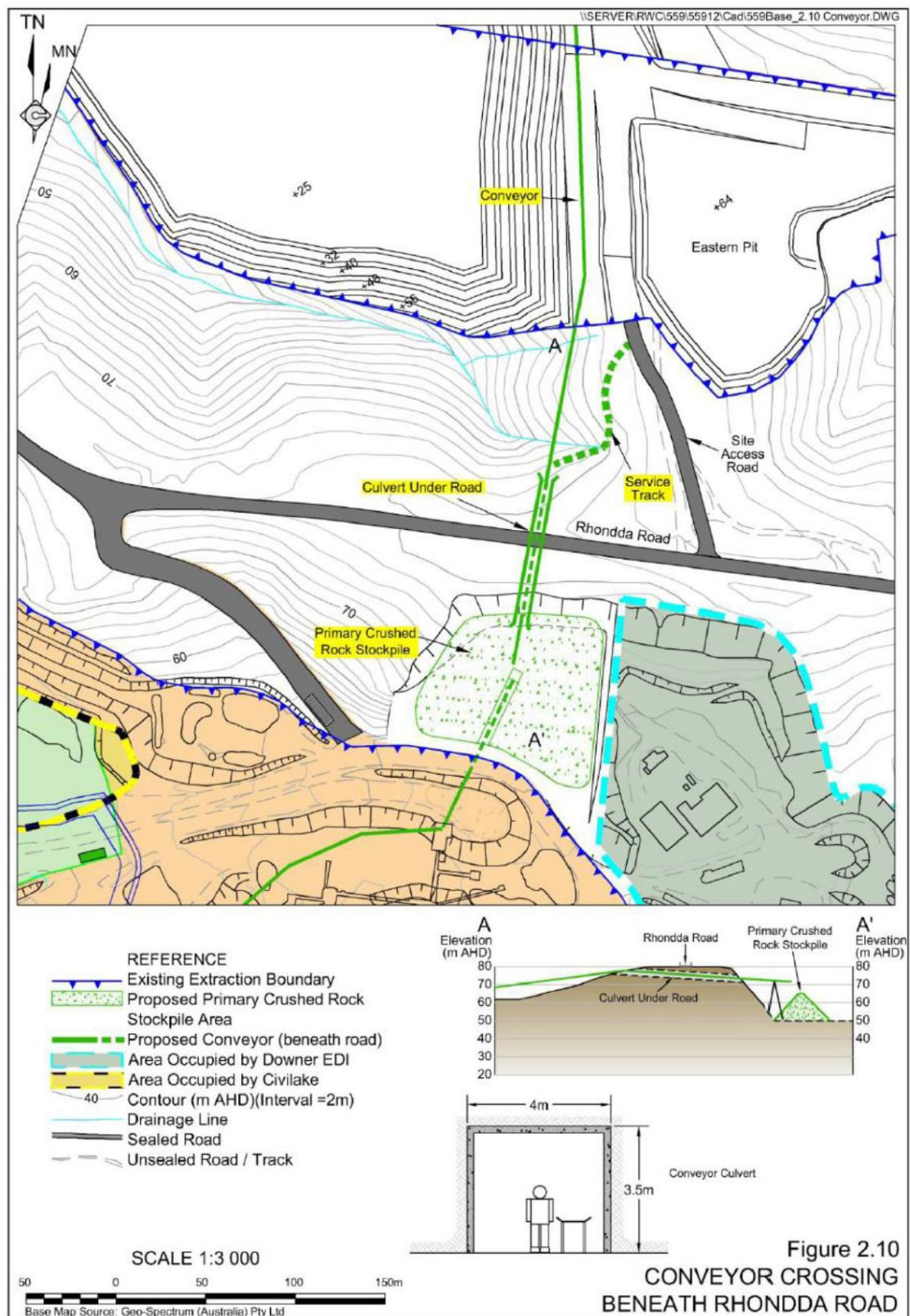


Figure 4: Conveyor crossing beneath Rhondda Road

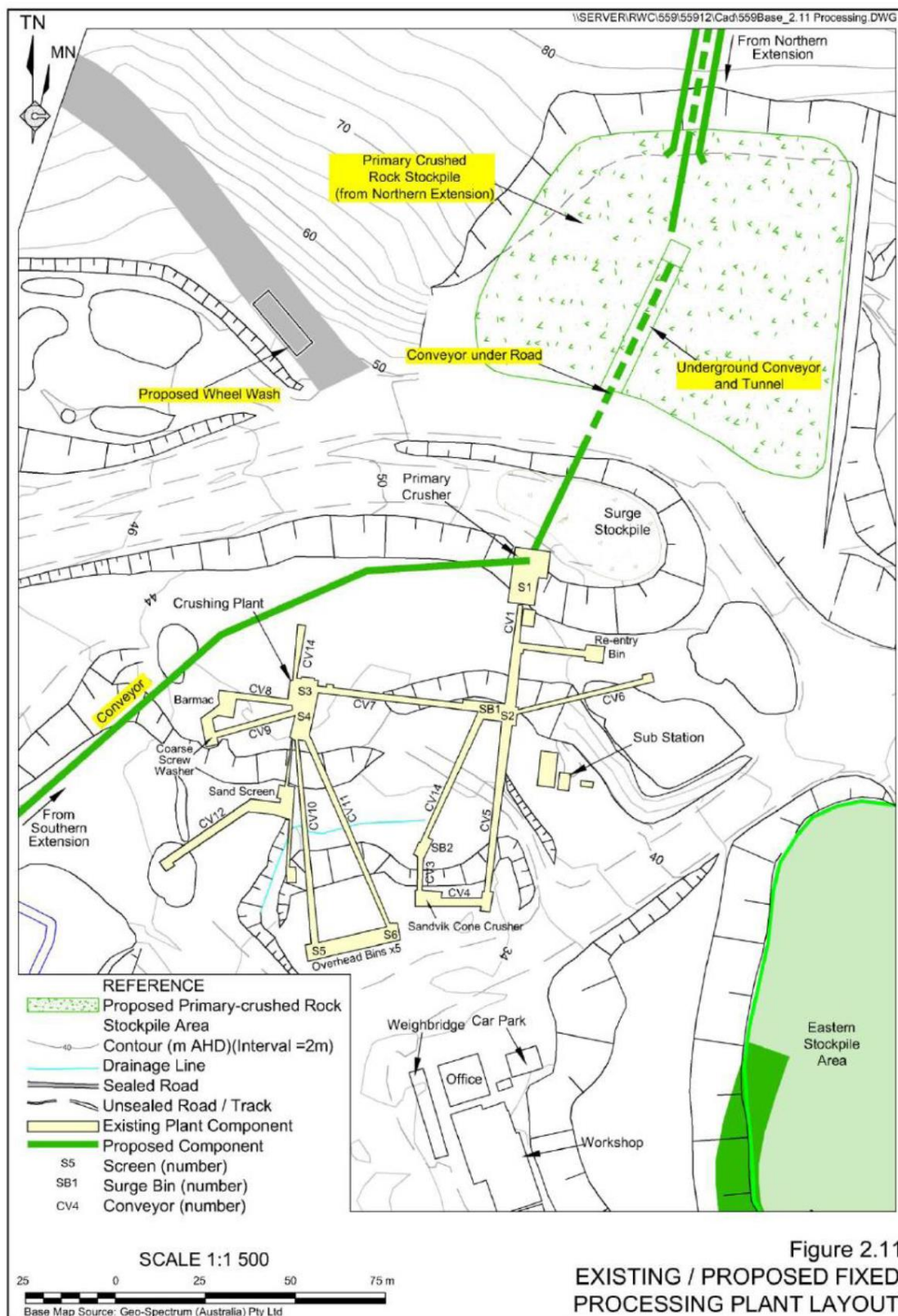


Figure 5: Existing / Proposed Fixed Processing Plant Layout

APPENDIX 3 STATEMENT OF COMMITMENTS

Desired Outcome	Action	Timing
1. Activities and Operations		
All approved activities are undertaken in the area(s) nominated on the approved plans and figures (unless moved slightly to avoid individual trees).	Clearly mark the boundary of each area of activity, i.e. the boundary of the Southern and Northern Extensions.	Prior to the commencement of quarrying operations.
2. Operating Hours		
Management of operations in accordance with the approved operating hours. (Note: No activities and operations are proposed on public holidays).	2.1 Undertake extraction and processing activities south of Rhondda Road between 6:00am and 8:00pm on Monday to Fridays and 6:00am to 2:00pm on Saturdays.	During operations.
	2.2 Undertake extraction and processing activities north of Rhondda Road between 7:00am and 8:00pm on Monday to Friday and 7:00am and 2:00pm on Saturdays.	During operations.
	2.3 Undertake product transportation activities 24hrs/day between 4:00am Monday to 6:00pm Saturday.	During operations.
	2.4 Undertake all blasts between 10:00am and 4:00pm Monday to Friday.	During operations.
	2.5 Restrict activities undertaken outside the hours identified in Commitments 2.1 and 2.2 to routine, low noise activities such as oil changes, minor welding and servicing of equipment.	During operations.
	2.6 The nominated operating hours above in Action 2.3 do not apply to the delivery of material if that material is requested by police, any emergency service or Council. Details of the circumstances of these requests would be provided to the Secretary and EPA within a reasonable period of the request(s).	
3. Waste Management		
Minimisation of general waste creation and maximisation of recycling, wherever possible.	3.1 Place all paper and general wastes originating from the site office, together with routine maintenance consumables from the daily servicing of equipment in garbage bins located adjacent to the site office and workshop.	Ongoing.
	3.2 Segregate waste into recyclables and non-recyclable materials for removal by a licensed contractor.	Ongoing.
Minimisation of the potential risk of environmental impact due to waste creation, storage and/or disposal.	3.3 Organise the regular collection of industrial wastes.	Monthly or as needs basis.
	3.4 Store waste oils and greases within the workshop area in either self-bunding containers or within suitably contained areas.	Ongoing.

Desired Outcome	Action	Timing
4. Security and Safety		
All members of the public are safe when near Teralba Quarry.	4.1 Construct and maintain the perimeter fence around the Northern Extension.	Prior to commencement of clearing works.
	4.2 Maintain lockable gates at all entry/exit points. Lock gates outside of operational hours.	Ongoing.
	4.3 Erect security warning signs at strategic locations around and within the Project Site. The signs would identify the presence of earthmoving equipment, deep excavations and steep slopes.	Ongoing.
	4.4 Continue to induct employees in safe working practices and hold regular follow-up safety meetings and reviews.	Ongoing.
	4.5 Install bunds along the margins of all internal haul roads where those roads are positioned adjacent to steep slopes, adjacent to the boundary of the extraction area and adjacent to all other steep slopes.	Ongoing.
	4.6 Ensure all trucks from the Project Site are driven in a safe and courteous manner in accordance with Metromix's Driver Code of Conduct.	Ongoing.
5. Rehabilitation and Biodiversity Offset Management		
	5.1 Deleted.	
	5.2 Deleted.	
6. Groundwater		
Prevention of groundwater contamination.	6.1 Securely store all hydrocarbon products within designated and bunded areas – see Action 16.11.	Ongoing
	6.2 Refuel and maintain all earthmoving equipment within designated areas – see Action 16.11.	Ongoing
	6.3 Prepare a Groundwater Management Plan, including trigger levels for actions – see Action 16.3.	Ongoing
	6.4 Prepare a Spill Management Plan to address potentially significant hydrocarbon spills – see Action 16.11.	Ongoing
Continuous monitoring of groundwater throughout the life of the Project.	6.5 Develop and implement a monitoring program as part of the Soil and Water Management Plan.	Within 6 months of the receipt of project approval.

Desired Outcome	Action	Timing
6. Groundwater (Cont'd)		
Continuous monitoring of groundwater throughout the life of the Project. (Cont'd)	6.6 Monitor water quality at the Mine Adit Dam for pH levels, electrical conductivity, suspended solids, and oil and grease.	Monthly (subject to review).
	6.7 Record flows/discharges from the Mine Adit Dam as well as quarry water usage.	Continuous.
	6.8 Review monitoring results to identify trends which may indicate impacts and allow mitigation measures to be implemented, if required.	Annually.
	6.9 Ensure all monitoring data is incorporated into each Annual Environment Management Report for the Teralba Quarry.	Annually.
7. Surface Water		
Maintenance of surface water quality.	7.1 Conduct site clearing activities in accordance with the Blue Book (Landcom, 2004) guidelines for erosion and sediment control.	Ongoing.
	7.2 Establish a regular monitoring program to review the effectiveness of all erosion and sediment control mitigation measures.	Prior to commencement of clearing works.
	7.3 Incorporate an update of the current Water Management Plan (GHD, 2007) into the Soil and Water Management Plan to take into account the proposed Southern and Northern Extensions.	Within 6 months of date of project approval.
	7.4 Ensuring any off-site discharge is monitored and reported in accordance with Environment Protection Licence 536.	As Required.
	7.5 Conduct site clearing activities in accordance with the Blue Book (Landcom, 2004) guidelines for erosion and sediment control.	Ongoing.
	7.6 Establish a regular monitoring program to review the effectiveness of all erosion and sediment control mitigation measures.	Prior to commencement of clearing works.
	7.7 Incorporate an update of the current Water Management Plan (GHD, 2007) into the Soil and Water Management Plan to take into account the proposed Southern and Northern Extensions.	Within 6 months of date of project approval.
	7.8 Ensuring any off-site discharge is monitored and reported in accordance with Environment Protection Licence 536.	As Required.
Capture of sediment-laden water flows from project-related disturbance.	7.9 Provide sufficient storage during all stages of works to prevent discharge off-site of sediment-laden water in accordance with the Blue Book (Landcom, 2004) guidelines for sediment retention dams.	Ongoing.
	7.10 Inspect all sediment dams and maintain as necessary (keep records).	Monthly or following rainfall exceeding 100mm in 2 days.

Desired Outcome	Action	Timing
7. Surface Water (Cont'd)		
Capture of sediment-laden water flows from project-related disturbance. (Cont'd)	7.11 Remove accumulated sediment from sediment dams when storage capacity reduced by 25% - document activity in maintenance records.	Following routine inspection.
Prevention of hydrocarbon contamination of water on the Project Site.	7.12 Securely store all hydrocarbon products within designated and bunded areas.	Ongoing.
	7.13 Refuel all earthmoving equipment within designated areas (with spill control).	Ongoing.
Separation of groundwater and surface water flows	7.14 Construct a drain from Dam B directly to the nearby watercourse to divert surface flows away from the Mine Adit Dam.	Within 3 months of Project Approval or following advice from NOW whichever occurs sooner.
8. Terrestrial Flora and Fauna		
Minimisation of impacts on flora and fauna within the Project Site.	8.1 Prepare and implement a Site Vegetation Management Plan (as part of the overall Landscape Management Plan – see Commitment 16.7).	Within 12 months of the receipt of project approval.
	8.2 Clearly define the <i>Tetratheca juncea</i> sub-populations to be retained.	For the life of the Project.
	8.3 Continue the established rehabilitation practices in appropriate areas.	Ongoing.
	8.4 Retain the extracted topsoil and vegetation within the immediate area of <i>Tetratheca juncea</i> populations and relocate to easement locations.	During clearing.
	8.5 Transfer biomass directly from vegetation clearing operations to rehabilitation areas. If it is not possible to transfer directly, stockpile material.	Ongoing.
	8.6 Control noxious weeds at all times in accordance with a Weed Management Plan (to be incorporated into the site Vegetation Management Plan).	Following approval of Landscape Management Plan (see Action 16.7) and then ongoing.
	8.7 Install species specific nesting boxes for fauna species displaced following clearing activities, re 20 boxes for microbats, 20 boxes for Little Lorikeets and 30 boxes for Sugar Gliders.	Prior to commencement of activities in the Northern Extension.
9. Traffic and Transport		
Transport operations are undertaken with minimal impact on other road users and residents.	9.1 Limit laden quarry-related truck movement numbers through Teralba: – 9 per hour; and – 85 per day.	Ongoing.
	9.2 Ensure that no product trucks from Teralba Quarry travel eastward through Teralba between 6:00pm and 6:00am.	

Desired Outcome	Action	Timing
9. Traffic and Transport (Cont'd)		
	9.3 Ensure all vehicles exiting the Project Site pass through a wheel-wash facility to remove dust generating material. 9.4 Provide a contribution to Lake Macquarie City Council during the ongoing life of the quarry if a suitable project approval is granted. 9.5 Prepare, implement and enforce 'Drivers Code of Conduct' addressing: <ul style="list-style-type: none"> — times that trucks can operate, especially through Teralba — speed limits; — duty of care to other drivers and pedestrians; — complaints procedure; — covering loads; and — avoidance of exhaust brakes. 	Prior to removal of product from within the extensions. Quarterly. Prepare within 4 months of receipt of project approval.
Transport operations are undertaken with minimal impact on other road users and residents. (Cont'd)	9.6 Undertake all transport activities in accordance with the project approval and Environment Protection Licence 536. 9.7 Ensure that only trucks owned by Metromix, or its shareholders and those of accredited contractors using airbag suspension and other noise controls are used to transport products between 10:00pm and 6:00am. 9.8 Ensure that all project-related vehicles are regularly serviced to ensure engine efficiencies are maintained at a standard that limits truck noise.	Ongoing.
10. Noise and Vibration		
The Project is designed to minimise and/or mitigate noise emissions received at surrounding residences and other sensitive receivers.	10.1 Ensure all mobile earthmoving equipment used on site is not fitted with high-frequency reversing alarms and is regularly serviced. 10.2 Ensure all earthmoving equipment used on site (including temporary equipment) have sound power levels and frequency spectra consistent with those nominated in Section 6 of Spectrum Acoustics (2011).	Ongoing. When new or temporary equipment is brought to site.
All activities are undertaken in such a manner as to reduce the noise level generated and minimise impacts on surrounding landholders and/or residents.	10.3 Ensure that the eastern side of the Southern Extension is extracted in such a manner that the active extraction face is retained on the eastern face thereby providing a topographic barrier between operating earthmoving equipment and residences to the east. 10.4 Construct a 5m high bund on the eastern edge of the Mid Pit Extraction Area.	Ongoing throughout the extraction operations in the Southern Extension area. During Mid Pit Extraction operations.

Desired Outcome	Action	Timing
10. Noise and Vibration (Cont'd)		
All activities are undertaken in such a manner as to reduce the noise level generated and minimise impacts on surrounding landholders and/or residents. (Cont'd)	10.5 Limit transportation noise by ensuring: <ul style="list-style-type: none"> all transport vehicles comply with the RTA's noise limits at all times; only trucks fitted with airbag suspension be used to transport products from the quarry between 10:00pm and 6:00am; and drivers comply with Code of Conduct. 	Ongoing
	10.6 Commission a noise monitoring program that comprises: <ul style="list-style-type: none"> attended noise monitoring for the Southern and Northern Extensions; and General noise monitoring. 	Ongoing
	10.7 Include a summary of all noise monitoring results in the AEMR.	Within the first 3 months of operations in the Southern and Northern Extensions
	10.8 Ensure all trucks departing the Project Site via the bottom gate travel at speeds <15km/hr.	Biannually for the first year of operation in the Southern and Northern Extensions, and further monitoring when substantiated complaints are filed.
	10.9 Review blast designs and modify, if required.	Annually.
		Ongoing.
11. Air Quality		
Site activities are undertaken without exceeding DECCW air quality criteria or goals.	11.1 Minimise clearing ahead of extraction activities	When blasting within 500m of any residence.
	11.2 Minimise the construction of minor roads and access tracks for soil stripping, extraction operations and rehabilitation.	Ongoing.
	11.3 Operate a water truck to manage dust suppression during periods of extended dry weather and/or high winds, or when dust nuisance has the potential to occur as a result of quarrying activities.	Ongoing.
	11.4 Stockpile material in sheltered locations away from sensitive receptors	Ongoing.
	11.5 Shield and/or suppress dust on conveyors and transfer points.	Ongoing.

Desired Outcome	Action	Timing
11. Air Quality (Cont'd)		
Site activities are undertaken without exceeding DECCW air quality criteria or goals. (Cont'd)	11.6 Limit internal road dust lift off by: <ul style="list-style-type: none"> — surfacing (and grading local) roads with appropriate materials; — enforcing a 30km/hr speed limit on all internal roads; — limiting load sizes to ensure that product does not extend over truck sidewalls; and — avoiding spillage during truck loading. 	Ongoing.
	11.7 Minimise dump heights from trucks, front-end loaders and conveyors.	Ongoing.
	11.8 Schedule blasts so that they do not occur during high wind situations.	Ongoing.
	11.9 Cease or modify activities on dry windy days when dust plumes are visible.	Ongoing.
	11.10 Water exposed areas not covered by gravel under dry and windy conditions when dust plumes are visible.	Ongoing.
	11.11 Adopt a complaints management system where all complaints are dealt with through investigation and implementation of corrective treatments.	Ongoing.
	11.12 Minimise truck queuing, unnecessary idling of trucks and unnecessary trips through logistical planning, where possible.	Ongoing.
	11.13 Ensure the on-site wheel wash reduces mud tracking along Railway Street.	Ongoing.
	11.14 Remove any mud tracking on Rhondda Road as a result of quarry movements.	Ongoing.
	11.15 Prepare and implement a Dust Management Plan for the quarry.	Within 4 months of the receipt of project approval.
Reduce the impact of Greenhouse Gas emissions from project related activities.	11.16 Minimise the impacts of greenhouse gases relating from diesel consumption by: <ul style="list-style-type: none"> — minimising the use of haul trucks through use of an overland conveyor; — reduce vehicle idling time; — maintaining optimum tyre pressures; and — the optimisation of haul routes to reduce transportation distance from the extraction areas. 	Ongoing.

Desired Outcome	Action	Timing
11. Air Quality (Cont'd)		
Record and monitor the local environment regarding dust impacts.	11.17 Minimise the impacts of greenhouse gases relating from electricity consumption by: <ul style="list-style-type: none"> ensuring the most efficient crusher and other processing plant technology is used; regularly inspecting the daily operations of lighting; and implementing solar-powered lighting, where possible. 	Ongoing.
	11.18 Continue to monitor dust impacts through; <ul style="list-style-type: none"> the existing five deposited dust gauges; and on-site meteorological monitoring to record relevant parameters. 	Ongoing.
12. Visibility		
Reduce the impact of the Project on the visual amenity of private and public vantage points.	12.1 Ensure all vegetation is maintained outside the Southern and Northern Extensions to provide long term shielding.	Ongoing.
	12.2 Sequence extraction activities in the Southern Extension to limit exposure of western faces until vegetation is well established.	Years 3 to 11 (approx).
	12.3 Progressively establish vegetation on extraction faces at 50m AHD and above in western section of the Southern Extension.	Years 3 to 11 (approx).
	12.4 Advance extraction in the eastern section of the Southern Extension in strips parallel to north-south faces.	Years 22 to 30 (approx).
	12.5 Include Annual photographs of the progressive rehabilitation of quarry benches in each AEMR.	
13. Heritage		
Provide appropriate protection to existing and future identified Aboriginal artefacts.	13.1 Halt all works in the immediate area if cultural objects are found and contact a suitably qualified archaeologist and Aboriginal community representative.	Ongoing.
	13.2 Halt all works in the immediate area if human remains are found and contact NSW Police, Aboriginal community representative and OEH.	Ongoing.
	13.3 Maintain reasonable efforts to avoid impacts to Aboriginal cultural heritage values at all stages of the development works	Ongoing.
	13.4 Invite representatives of Local Aboriginal stakeholders to monitor initial ground disturbance activities.	Prior to soil stripping campaigns.
	13.5 Develop an Aboriginal Culture Educational Program for the induction of all personnel and contractors involved in the construction activities on site. Records are to be kept of which staff/contractors were inducted and when for the duration of the project. The program would be developed and implemented in collaboration with the local Aboriginal community.	Prior to first soil stripping campaign and then ongoing.

Desired Outcome	Action	Timing
13. Heritage (Cont'd)		
Provide appropriate protection to any non-Aboriginal artefacts identified in operational areas.	13.6 Halt all works in the immediate area if any non-Aboriginal artefacts are found and notify the Heritage Council of NSW.	Ongoing
14. Soils		
Prevent excessive soil deterioration during stripping and transportation.	14.1 Undertake soil stripping within slightly moist condition and avoid excessively wet or dry conditions. 14.2 Place stripped soil directly onto reshaped overburden or dedicated stockpile area. 14.3 Remove soil through grading or pushing soil into windrows with graders or dozers for later collection for loading into rear dump trucks by front-end loaders.	During soil stripping operations. During soil stripping operations. During stripping and transport operations.
Retention of soil viability until use in rehabilitation.	14.4 Leave the surface of soil stockpiles in as coarsely structured a condition as possible in order to promote infiltration and minimise erosion until vegetation is established. 14.5 Maintain a maximum stockpile height of 3m. Clayey soils would be stored in lower stockpiles for shorter periods of time compared to coarser textured sandy soils. 14.6 Seed soil stockpiles with sterile cover crop (and limited fertiliser) as soon as possible where stockpiling is planned. 14.7 Maintain an inventory of available soil to ensure adequate topsoil materials are available for planned rehabilitation activities. 14.8 Assess soil stockpiles for weed infestation to determine if stockpiles require weed removal applications before being re-spread onto reshaped overburden.	Immediately following stockpile construction. During staged Rehabilitation stages. Immediately following stockpile construction. Ongoing. During staged Rehabilitation stages.
Achieve a good soil cover for long term rehabilitation.	14.9 Spread topsoil to a minimum depth range of 0.1 m (steep slopes) to 0.2m (flatter areas). Specific topsoil resspreading depths for different post mining landform elements would be specified in the Landscape Management Plan.	During staged Rehabilitation stages.
15. Bushfire Hazard		
Avoidance of any fires on site, particularly in native vegetation.	15.1 Adopt appropriate controls during re-fuelling. 15.2 Ensure fire extinguishers are fitted to all site vehicles. 15.3 Incorporate a Bushfire Management Plan in the overall Emergency Response Plan for the quarry.	Ongoing. Ongoing. Within 6 months of the receipt of project approval.

Desired Outcome	Action	Timing
16. Documentation and Further Approvals		
To provide site personnel with the necessary guidance on the expectations of Metromix management and the NSW Government and LMCC to achieve the required level of environmental performance.	16.1 Environmental Management Strategy.	Within 6 months of the receipt of project approval.
	16.2 Environmental Management Plan (EMP). Focus on the next 5 years.	Within 6 months of receipt of project approval.
	16.3 Soil and Water Management Plan. (Incorporating management, monitoring and contingency plans for soils, surface water and groundwater).	Within 6 months of the receipt of project approval.
	16.4 Noise and Blast Management Plan. (Incorporating a blast and noise monitoring component.)	Within 4 months of the receipt of project approval.
	16.5 Air Quality Management Plan. (Incorporating an air quality monitoring component.)	Within 4 months of receipt of project approval.
	16.6 Transport Management Plan.	Within 4 months of receipt of project approval.
	16.7 Landscape Management Plan. (Incorporating a Vegetation Management Plan for site rehabilitation and the on-site Biodiversity offset.)	Within 12 months of the receipt of project approval.
	16.8 Extraction Management Plan (for operations within 5 vertical metres of the Great North Coal Seam).	Prior to commencing any extraction within 5 vertical metres of the Great Northern Coal Seam.
	16.9 Heritage Management Plan.	Within 4 months of the receipt of project approval.
	16.10 Annual Environmental Management Report (AEMR).	Annually (by 31 March each year covering the previous calendar month) .
	16.11 Hydrocarbon Management Plan. (Incorporating the storage and use of fuel and spill management.)	Within 6 months of receipt of approval.
	16.12 Annual Production Statistics to the DTIRIS (Division of Resources and Energy).	Annually (by 31 July).
	16.13 Geotechnical Assessments and relevant design drawings for site structures and buildings (for submission to the Mines Subsidence Board).	Prior to construction of site infrastructure and buildings.

Desired Outcome	Action	Timing
16. Documentation and Further Approvals (Cont'd)		
Ensure planning is undertaken sufficiently ahead of quarry closure to achieve a smooth transition to the subsequent land uses	16.14 Prepare a Quarry Closure and Final Land Use Plans for the land within the Project Site that is to be developed for purposes other than nature conservation. The Plans would be prepared in consultation with the Lower Macquarie City Council	3 years prior to cessation of extraction north of Rhondda Road (approximately 2031) and south of Rhondda Road (approximately 2039).

APPENDIX 4 TRANSPORT ROUTES

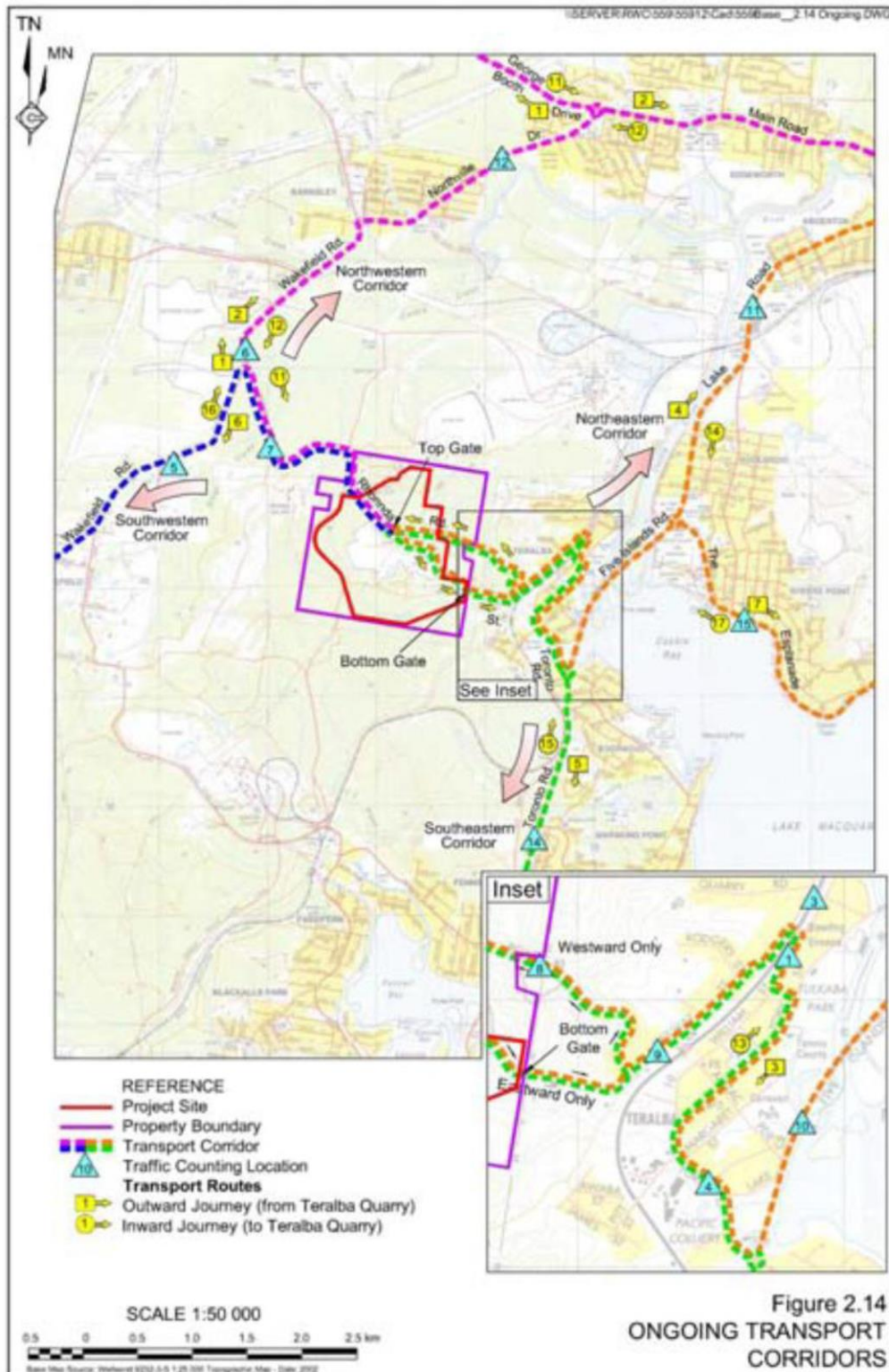


Figure 6: Transport Routes

APPENDIX 5

BIODIVERSITY OFFSET STAGES

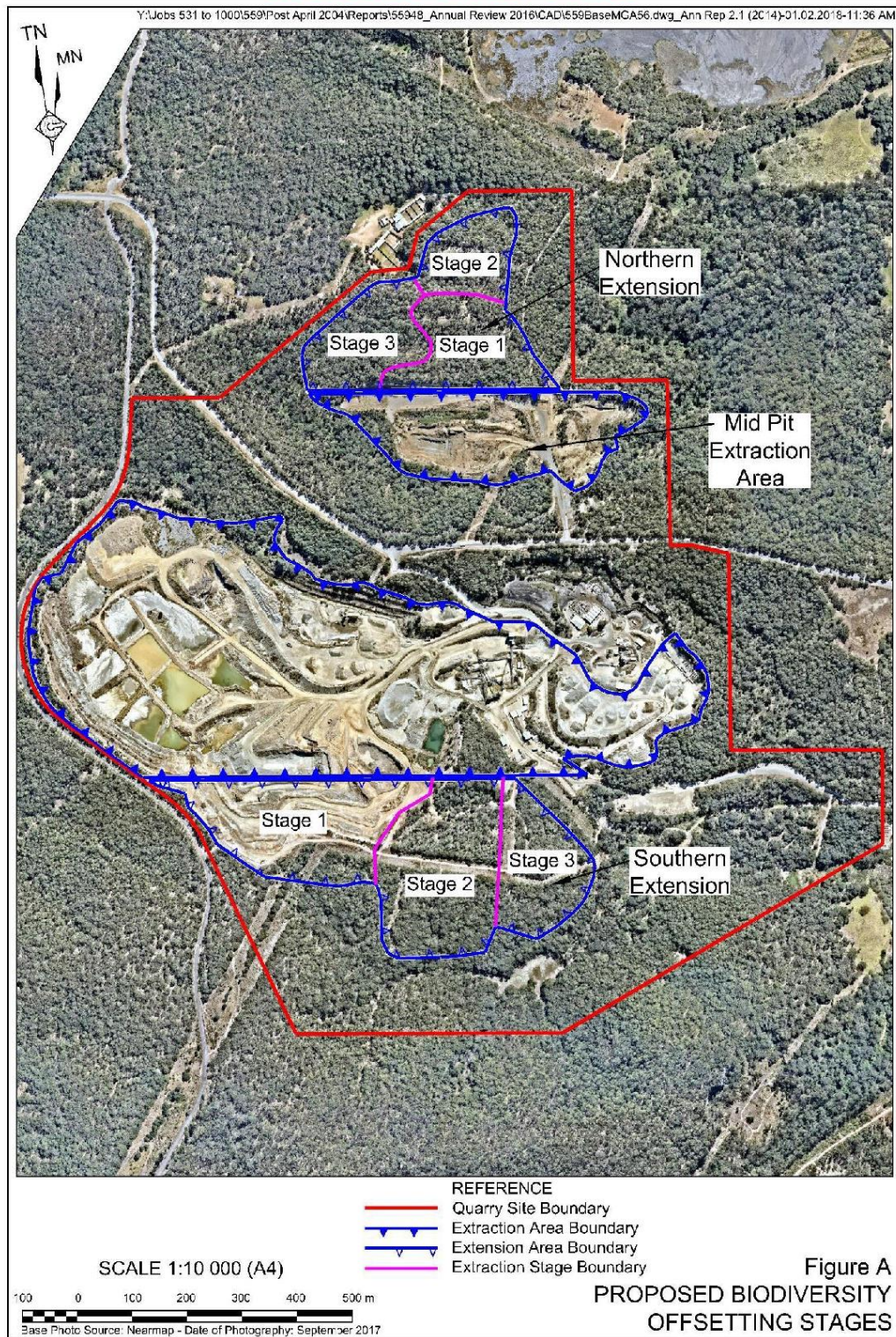


Figure 7: Biodiversity Offset Stages for Northern and Southern Quarry Extensions

APPENDIX 6

REHABILITATION STRATEGY

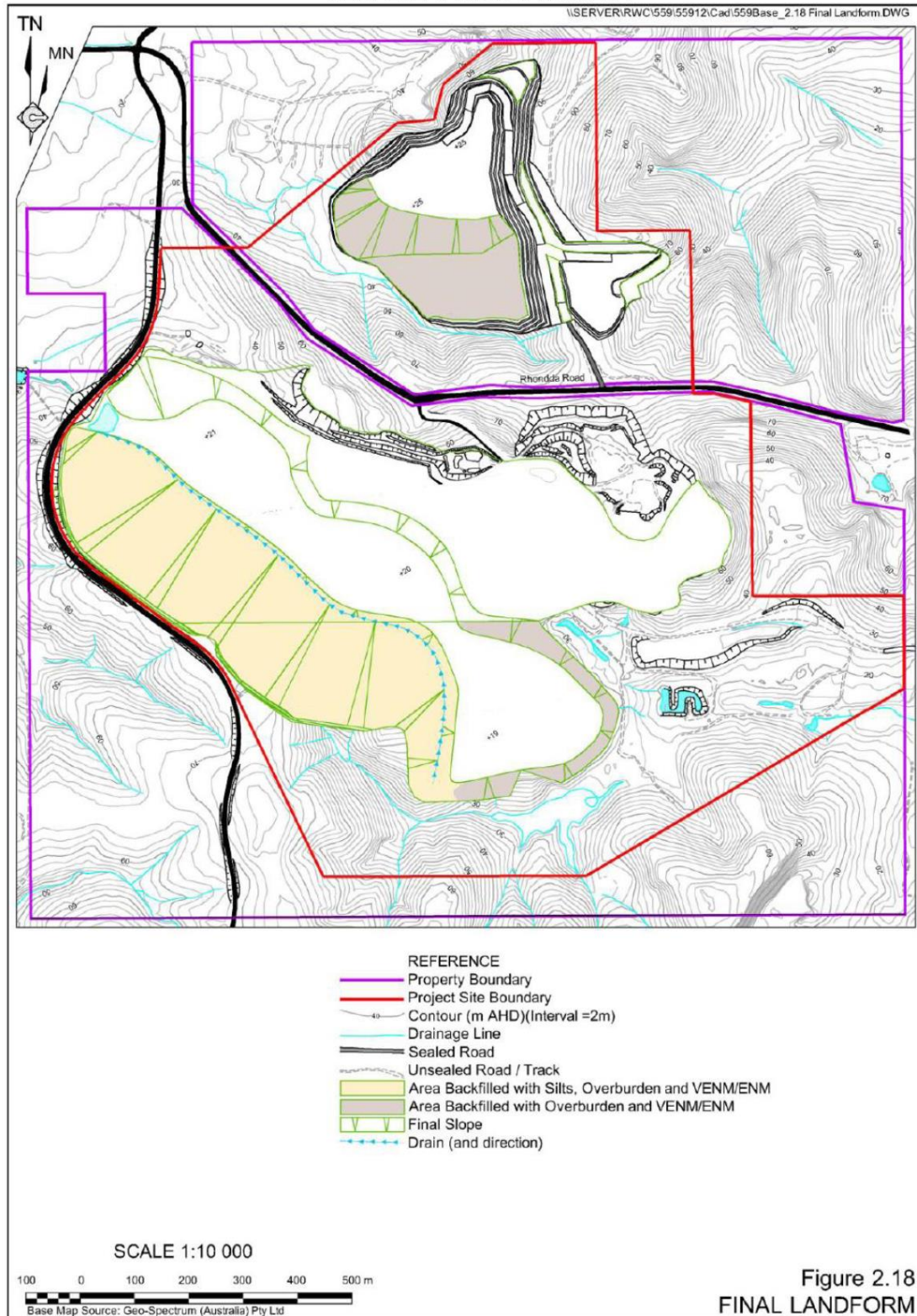


Figure 8: Indicative Final Landform