

February 2017

Independent Environmental Audit

Teralba Quarry Project



Trevor Brown & Associates
APPLIED ENVIRONMENTAL MANAGEMENT CONSULTANTS

REPORT: METRMIXTQ/MARCH 2017/REV 1



Teralba Quarry

Independent Environmental Audit

February 2017

This document was prepared for the sole use of Metromix Pty Limited and the regulatory agencies that are directly involved in the approval of the Teralba Quarry Extensions Project. No other party should rely on the information contained herein without the prior written consent of Trevor Brown & Associates.

A handwritten signature in black ink, appearing to read 'T. Brown', is positioned above the printed name and title.

Principal Environmental Management Consultant
Trevor Brown & Associates
136 Sanctuary Point Road
Sanctuary Point NSW 2540


Independent Audit Certification Form	
Development Name	Teralba Quarry
Development Consent No.	Project Approval 10_0183
Description of Development	Hard rock quarry
Development Address	Rhondda Road Teralba NSW 2430
Operator	Metromix Pty Ltd
Operator Address	Head Office, Level 4, 107 Phillip Street, Parramatta NSW 21124
Independent Audit	
Title of Audit	Teralba Quarry – Independent Environmental Audit – Feb 2017
<p>I certify that I have undertaken the independent audit and prepared the contents of the attached independent audit report and to the best of my knowledge:</p> <ul style="list-style-type: none"> • The audit has been undertaken in accordance with relevant approval condition(s) and in accordance with the auditing standard AS/NZS ISO 19011:2014 and Post Approval Guidelines – Independent Audits • The findings of the audit are reported truthfully, accurately and completely; • I have exercised due diligence and professional judgement in conducting the audit; • I have acted professionally, in an unbiased manner and did not allow undue influence to limit or over-ride objectivity in conducting the audit; • I am not related to any owner or operator of the development as an employer, business partner, employee, sharing a common employer, having a contractual arrangement outside the audit, spouse, partner, sibling, parent, or child; • I do not have any pecuniary interest in the audited development, including where there is a reasonable likelihood or expectation of financial gain or loss to me or to a person to whom I am closely related (i.e. immediate family); • Neither I nor my employer have provided consultancy services for the audited development that were subject to this audit except as otherwise declared to the lead regulator prior to the audit; and • I have not accepted, nor intend to accept any inducement, commission, gift or any other benefit (apart from fair payment) from any owner or operator of the development, their employees or any interested party. <p>I have not knowingly allowed, nor intend to allow my colleagues to do so. Note. a) The Independent Audit is an 'environmental audit' for the purposes of section 122B(2) of the Environmental Planning and Assessment Act 1979. Section 122E provides that a person must not include false or misleading information (or provide information for inclusion in) an audit report produced to the Minister in connection with an environmental audit if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, \$1 million and for an individual, \$250,000. b) The Crimes Act 1900 contains other offences relating to false and misleading information: section 192G (Intention to defraud by false or misleading statement—maximum penalty 5years imprisonment); sections 307A, 307B and 307C (False or misleading applications/information/documents—maximum penalty 2years imprisonment or \$22,000, or both).</p>	
Signature	
Name of Lead/Principal Auditor	Trevor Brown
Address	136 Sanctuary Point Road, Sanctuary Point, NSW 2540
Email Address	tebrown@bigpond.com
Auditor Certification (if relevant)	Approved by the Secretary of Department of Planning and Environment, 15 December 2016 Royal Australian Chemical Institute Chartered Member 2428
Date:	March 2017

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GLOSSARY

Annual Return	Annual Return required under the EPL No. 0536 and EPL No. 13015
Annual Review	Review required under Project Approval Schedule 5 condition 4
BCA	Building Code of Australia
CCC	Community Consultative Committee
Department	Department of Planning and Infrastructure (as defined in the Project Approval definitions). (NB: Between 2005 and 2011, the department was variously known as the Department of Planning, the Department of Planning and Infrastructure and Planning and Infrastructure. The Department adopted the current name of Department of Planning and Environment in 2014).
Director-General	Director-General of the Department of Planning and Infrastructure, or delegate
DP&E	Department of Planning and Environment
DP&I	Department of Planning and Infrastructure
DPI	Department of Primary Industries
DPI-Water	Department of Primary Industries – Water (previously New South Wales Office of Water)
DRE	Division of Resources and Energy
EA	<i>Environmental Assessment: Teralba Quarry Extensions</i> , November 2011
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 No. 0536 and 13015 under <i>Protection of the Environment Operations Act 1997</i>
km	Kilometres
LGA	Local Government Area
m AHD	Metres Australian Height Datum
mgbl	metres below ground level (groundwater)
Minister	Minister for Planning, or delegate
Mitigation	Activities associated with reducing the impacts of the project
NOW	New South Wales Office of Water
OEH	Office of Environment and Heritage (within Department of Premier and Cabinet)
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
Project Approval	Project Approval 10_0183 Teralba Quarry Extensions
Proponent	Metromix Pty Ltd
RMS	Roads and Maritime Services
RTA	Roads and Traffic Authority (now RMS)
Secretary	Secretary of the Department of Planning and Environment
SoC	Statement of Commitments in Environmental Assessment, section 6, November 2011
TSS	Total Suspended Solids

to the residential areas of Teralba village. No complaints were received between January 2014 and December 2016 related to dust / air quality.

Water Management

Status

Compliant Ongoing

The Water Management Plan (Revision 3) was submitted to DP&E and approved on 20 December 2016. Implementation of the management measures and monitoring in the Water Management Plan for surface water, erosion and sediment control and groundwater have occurred for the Teralba Quarry operation and activities in accordance with the Water Management Plan. Water management on the Teralba Quarry site was observed during this independent environmental audit to be compliant with the requirements of the EPL and Project Approval conditions.

Surface Water Management

Status:

Compliant Ongoing

A Surface Water Management Plan (included in the overall Water Management Plan Revision 3 section 7.1) was approved by DP&E on 20 December 2016. Surface water quality and control measures implemented in accordance with the Water Management Plan, provide a satisfactory site water management system for all surface water runoff and collection at the Teralba Quarry, to ensure protection of the surrounding natural waterways. Water monitoring results between February 2014 to February 2017 indicated compliance with water quality criteria expressed in EPL 0536 L2.4 for all discharge events from Mine Adit Dam A and Overflow Dam B. No discharge to the environment occurred between 2014 and 2016 from EPA monitoring Point 6 on the north-eastern boundary of Teralba Quarry site (west of Dam M) or EPA monitoring Point 7 on the north-eastern boundary of premises (east of Dam K) during the 2014 to 2017 period.

Erosion and Sediment Control

Status

Compliant Ongoing

The erosion and sediment control measures on the Teralba Quarry site have adequate capacity to retain surface runoff from disturbed areas of the Teralba Quarry and to settle sediment. The calculations for the sediment dam capacities are conservative and the sediment dams inspected during the site visit had their design capacity available for collection and settlement of sediment from surface runoff water collected in the dams. In general, severe rainfall events were managed within the stormwater runoff and sediment ponds capacities with the dams capable of receiving and controlling all surface runoff in the event of heavy rainfall. No direct discharge to the environment had occurred from the Teralba Quarry stormwater management and sediment ponds between February 2014 and February 2017.

Groundwater

Status

Compliant

The revision of the Water Management Plan to address the comments from DP&I on groundwater assessment criteria, including trigger levels, a program to monitor surface water inflows into the groundwater system beneath the site and a program to monitor the impacts of the project on the local aquifer, were addressed in 2014 and the Water Management Plan was further revised and approved on 20 December 2016. The results of the groundwater quality assessment from EPL Monitoring Point 4 – Mine Adit Dam A (groundwater source) prepared to satisfy EPL 0536 condition 8-U1.1 to U1.3, demonstrated that the Teralba Quarry operations had not adversely impacted the water quality collected in the Mine Adit Dam.

Traffic and Transport

Status

Generally Compliant

The Traffic Management Plan and Drivers Code of Conduct are adequate for the control of trucks and drivers associated with the transport of product from the Teralba Quarry. The number of truck movements associated with the quarry activities and restricted time frames specified in the Project Approval Schedule 2 conditions 8 and 9, are recorded daily on the Truck Movement Reporting Forms and the number of laden trucks dispatched from the Teralba Quarry between January 2014 and December 2016, generally complied with the limits of hourly truck dispatch rates in Project Approval Schedule 2 conditions 8 and 9. A small number of non-compliances with the truck dispatch time limits between January 2014 and December 2015. The number of laden trucks dispatched from the Teralba Quarry during January 2016 to February 2017 was compliant with Project Approval 10_0183 Schedule 2 condition 8 and 9 requirements.

Waste Management

Status

Compliant

Waste management on the Teralba Quarry site occurs in accordance with the approved Waste Management Plan. The management of the waste materials and the volumes of waste generated on the site from the Teralba Quarry activities is considered to be satisfactory. Waste is minimised where practicable and reuse / recycling occurs where possible to reduce waste going to landfill.

Heritage Management**Status****Compliant**

A draft Heritage Management Plan was to satisfy the requirements of Project Approval 10_0183 Schedule 3 condition 49 and approved by DP&I within 6 months of the date of this Project Approval. Comments were received from DP&I on the draft plan and the revised Heritage Management Plan was approved on 19 September 2014. No heritage items have been encountered on the Teralba Quarry site between 2014 and 2017.

Landscape, Rehabilitation and Biodiversity**Status****Administrative Non-Compliance**

A Landscape Management Plan was approved by DP&I on 19 July 2014 and includes implementation of the Biodiversity Offset Strategy, integrated with the overall landscape management and rehabilitation of the Teralba Quarry site. The requirements of Project Approval Schedule 3 condition 53 to develop a conservation agreement (or an alternative measure) in relation to long term security of biodiversity offsets has been the subject of consultation with DP&E and OEH between 2014-2017. Rehabilitation of the previously disturbed areas of Teralba Quarry, has progressively occurred with native vegetation. The restored areas in various portions of the Teralba Quarry site were observed to exhibit similar vegetation diversity and community structure to the surrounding natural environment.

1. INTRODUCTION

1.1 Background

Project Approval granted for the Teralba Quarry Extensions requires an Independent Environmental Audit of the project to be conducted in accordance with the Project Approval 10_0183 Schedule 5 conditions 9:

“The independent environmental audit referred to in condition 5.1c) shall:

- (a) be conducted by a suitable qualified, experienced and independent team of experts whose appointment has been endorsed by the Director-General;*
- (b) include consultation with the relevant agencies;*
- (c) assess the environmental performance of the project and assess whether it is complying with the requirements of this approval, and any other relevant approvals and relevant EPL/s;*
- (d) review the adequacy of any approved strategy, plan or program required under the abovementioned approvals; and*
- (e) recommend measures or actions to improve the environmental performance of the project, and/or any strategy, plan or program required under these approvals.*

This current Independent Environmental Audit was commissioned by Metromix for the Teralba Quarry and conducted by Trevor Brown & Associates, following endorsement of Trevor Brown as auditor by the Secretary of Department of Planning and Environment (DP&E) on 15 December 2016 to satisfy Project Approval 10_0183 Schedule 5 condition 9(a).

The audit was conducted generally in accordance with the Australian/New Zealand Standards AS/NZS ISO 19011:2002 - *Guidelines for Quality and/or Environmental Management System Auditing and Independent Audit Guideline* (DP&E, October 2015).

1.2 Scope of Work

The scope of work for the Independent Environmental Audit of the Teralba Quarry Extensions included:

- review of implementation of the requirements of the Project Approval conditions, and other licences and approvals for the construction and operation of the Teralba Quarry;
- site inspection of the quarry operation and activities;
- review on-site documentation and monitoring data relevant to the Independent Environmental Audit;
- discussions with Metromix project staff in relation to the Project Approval conditions;
- assessment of compliance with the Project Approval and other environmental approval conditions; and
- preparation of an Independent Environmental Audit Report providing assessment of compliance against each environmental approval condition.

1.3 Structure of the Independent Environmental Audit Report

The Independent Environmental Audit Report provides comment on compliance of each condition of approval in a tabulated form, with additional discussion where required on specific matters to generally address the requirements of the Independent Audit Guideline. The tables of conditions for the Project Approval, Environmental Protection Licence and other relevant environmental approvals are attached to the main text of the report with the compliance status provided where auditable.

The format of the Independent Environmental Audit Report is as follows:

Glossary

Executive Summary	
Section 1	Introduction
Section 2	Teralba Quarry Development
Section 3	Approvals and Licenses
Section 4	Agency Consultation
Section 5	Review of Environmental Management
Section 6	Conclusions
Attachment A	Project Approval 10_0183 - Consolidated Conditions
Attachment B	Statements of Commitment
Attachment C	Environment Protection License No. 0536
Attachment D	Environment Protection License No. 13015

1.4 Compliance Tables

This Independent Environmental Audit Report has assessed the activities of the Teralba Quarry for compliance with the intent of the conditions of the Project Approval 10_0183 and Environment Protection Licence 0536 via site inspections, document review and verification of relevant documentation related to the conditions of approval. The compliance status of each condition is expressed (in general accordance with Independent Audit Guideline section 4.1), in Attachments A to D to this Independent Environmental Audit Report:

Assessment Status	Criteria Description
Compliant	Where verifiable evidence has been collected to demonstrate that the intent of the elements of the conditions of the regulatory approval and appropriateness of implementation against the Project Approval 10_0183 has occurred.
Compliant Ongoing	The intent and specific requirements of the condition have been met and the requirements are an ongoing requirement for the operation of Teralba Quarry project.
Administrative Non-compliance	A technical non-conformance with a condition of approval that would not result in any risk or material harm to the environment (e.g. the submission of a report to government later than required under the approval conditions).
Non-Compliance – Low Risk	Non-compliance with a condition of approval with the potential for moderate environmental consequences, but is unlikely to occur, or, potential for low environmental consequence but is likely to occur.
Non-Compliance – Moderate Risk	Non-compliance with a condition of approval with the potential for serious environmental consequences but unlikely to occur, or, potential for moderate environmental consequence but likely to occur.
Non-Compliant – High Risk	Non-compliance of a condition of approval with the potential for significant environmental consequences, regardless of the likelihood of occurrence.
Not verified	Where the auditor was not able to collect sufficient verifiable evidence to demonstrate that the intent and all elements of the requirement of the regulatory approval have been complied with within the scope of the audit.
Not active / Not triggered	A regulatory approval requirement / condition has an activation or timing that had not been triggered at the date of the audit, therefore a determination of compliance could not be made.
Noted / Not applicable	A statement or fact where no assessment of compliance is required.

Any Non-compliance with a condition of approval (if identified) will be subject to a risk assessment in accordance with the *Independent Audit Guideline* section 4.1 Table 2 and reported in section 6 Conclusions of this Independent Environmental Audit Report.

1.5 Limitations of the Audit

The auditor received complete cooperation from Metromix personnel during the audit. Documentation that was not immediately available during the audit site visit / inspection and document review, was provided to the auditor by Metromix, subsequent to the site visit.

The findings of the audit are based upon visual observations on the site, interviews with site personnel and interpretation of records / documentation provided by Metromix. Opinions presented within the audit apply to the site as observed at the date of the audit site inspection and from information provided by Metromix personnel. Any changes to this information of which the Trevor Brown & Associates is not aware and has not had the opportunity to evaluate, have not therefore been considered in this report. The auditor has taken due care to consider all reasonably available information provided during the audit and has taken this information to represent a fair and reasonable characterisation of the environmental status of the site.

The adequacy of strategy/ plans / programs required under the Project Approval 10_0183, was assessed by reference to the requirements of the conditions of approval, and documentation from the relevant agency(s) to Metromix in relation to the status / approval of the prepared documents, at the date of this audit (February 2017).

2.0 TERALBA QUARRY DEVELOPMENT

2.1 Background to Teralba Quarry

The Teralba Quarry was initially established by Premier Metal and Gravel Pty Ltd in 1964. The quarry was acquired by the Readymix Group in October 1983, and on-sold to Metromix in August 1986. The major proportion of the sales from the Teralba Quarry have been road-base, drainage aggregates, sands and fill products for the civil construction industry throughout Newcastle suburbs, the Central Coast and the lower Hunter Valley.

The Teralba Quarry was operated in accordance with Development Consent (DA 130/42) granted by the Lake Macquarie Municipal Council on 8 May 1964, for resource identified on 29.6ha of land north of Rhondda Road and 75.2ha south of Rhondda Road.

The currently approved Teralba Quarry Extension project (22 February 2013) provides for the continuation and expansion of the Teralba Quarry for the production of sand, aggregates and road base:

- extracting up to 1.2 Mtpa of mainly conglomerate rock;
- processing and washing of raw quarried material producing up to 1 Mtpa of quarry product including sand, aggregates and road base;
- trucking by road of up to 1.0 Mtpa of quarry products;
- establishing a tunnel beneath Rhondda Road for a conveyor (if required to be constructed for the Northern Extension); and
- progressive rehabilitation of the disturbed areas of the quarry site.

The total Teralba Quarry Extension site area is 130ha, including worked out extraction areas and infrastructure (process plant and stockpile areas, administration building, weighbridge and workshop area) and 73.3 ha consisting of:

- 47.5 ha of current extraction areas;
- Northern Extension area 16.5 ha;
- Southern Extension area 9.3 ha.

2.2 Topography

The regional topography around the project site straddles a series of spurs and drainage depressions emanating from a northeast/southwest trending ridge that discharges run-off to Cockle Creek to the north and to Cockle Bay of Lake Macquarie to the east.

The Teralba Quarry topography is characterised by gently inclined to moderately inclined slopes with some prominent moderately steep to steep ridgelines with level to gently inclined crests. Gently inclined lower slopes are prominent in the south-eastern corner of the Teralba Quarry where site drainage is easterly towards Lake Macquarie.

The Southern Extraction Area comprises a stepped stockpiling and processing area located below the elevation of Rhondda Road. Elevations vary from over 70m AHD along the ridge crest to the west down to approximately 25m AHD in the drainage line at the surface of the south-eastern corner of the project site.

The Northern Extension Area is dominated by moderately inclined to very steep slopes forming a north-south orientated ridgeline, which delineates its eastern boundary and will provide screening of the extraction activities from the east (i.e. towards Teralba Village). The ridgeline has a maximum elevation of 90m AHD and is characterised by incised drainage lines. From the top of the ridge, the topography slopes westwards through the proposed Northern Extension and existing Mid Pit Extraction Area.

2.3 Surrounding Land Use

The Teralba Quarry site is surrounded by a number of underground coal mines (collieries) beneath and surrounding the project site and residential areas within southwestern suburbs of Newcastle.

The four collieries beneath and surrounding the Teralba Quarry project site are:

- Westside Colliery – mining of coal occurred from the Great Northern Coal Seam and the Fassifern Coal Seam within the then Northern Extended Colliery in the mid-20th Century.
- Northern Colliery – is located immediately west of the Teralba Quarry project site and was known as the Rhondda Colliery. Rhondda Colliery ceased operations in 1971. A fire started in an underground coal seam in 1994 that took approximately 12 years to extinguish. The owner of the Northern Colliery (Coal and Allied Industries Limited) maintains an Environment Protection Licence (EPL) 3139 for the ongoing discharge of water from the Northern Colliery via the Mine Adit Dam on the southwestern side of the Teralba Quarry Southern Extraction Area.
- Newstan Colliery is located south of the Teralba Quarry site. The surface area above the colliery incorporates the private coal haul road that traverses the western side of the Teralba Quarry project site for access and delivery of coal from the collieries to the north to Eraring Power Station.
- Wallsend Colliery and the related Macquarie Coal Preparation Plant (Oceanic Coal) are located to the north and northwest of the Teralba Quarry site. Coal from these facilities has been transported via the private coal haul road to the Eraring Power Station or despatched by train for export from the Port of Newcastle.

The land use between the Teralba Quarry and the closest residences is predominantly remnant native bushland with undulating ridge and creek topography.

The closest residential suburb to the Teralba Quarry site is Teralba village, located approximately 0.5km to the east of the active Southern Extraction Area within the Teralba Quarry site adjacent to Rhondda Road. The residences on the western side of Victoria Street will be approximately 460m to 575m from the Northern Extension Area. The closest residences to the west-northwest are located adjacent to Wakefield and School Roads, between 1.25km and 1.75km from the Southern Extraction Area.

The area immediately to the east of the Teralba Quarry site and adjacent to the Northern Railway line comprises an industrial precinct with a range of light industries including engineering workshops, fabrication plants and a concrete batching plant.

Rural residential land use dominates the area to the west of the former Rhondda Colliery in the vicinity of Wakefield, a small rural residential community. The residential suburbs of Barnsley and Northville are located approximately 2km to 3km north of the Teralba Quarry site and straddle sections of the north-western transport route from the Teralba Quarry.

2.4 Other Land Use within the Teralba Quarry Boundary

Other land uses within the boundaries of the Teralba Quarry site are:

- An asphalt plant operated by Downer EDI, occupies an area of approximately 3ha within the northern central section of the Southern Extraction Area, north of the offices/workshop, within Lot 1 DP 224037.
- A management and operation of the pugmill was transferred to Metromix 31 July 2015 under Environment Protection Licence 13015 on an area of approximately 2.1ha adjacent to the active Southern Extraction Area, within Lot 1 DP 224037. (This pugmill was previously operated by Civilake, the civil works section of Lake Macquarie City Council, prior to July 2015).

- Oceanic Coal leases a narrow, north-south tract of land covering parts of Lots 1 and 2. The lease covers the sealed road that Oceanic Coal uses to haul coal from the Macquarie Coal Washing Plant to the Eraring Power Station.

2.5 Teralba Quarry Resource

The conglomerate resource exposed in the Teralba Quarry is located within a geological unit referred to as the “Teralba Conglomerate” which is approximately 45m to 60m thick and is directly above the Great Northern Coal Seam. The conglomerate is interbedded with layers of sandstone, with the proportion of sand and gravel variable throughout the geological unit and across the Teralba Quarry site.

The extraction of the conglomerate within the Teralba Quarry site is sufficiently consolidated for it to require blasting to assist in disaggregation prior to being excavated, loaded and transported for processing at the Teralba Quarry plant. Blasting is undertaken typically once or twice per week.

Processing involves both size reduction with a series of crushers and screening to separate preferred product sizes. Processing commences with all raw materials passing through a dry process (with dust suppression) and approximately 65% of this crushed material passing to the wet circuit.

2.6 Teralba Quarry Status 2017

Project Approval 10_0183 granted on 22 February 2013, provided approval of the activities described in the *Environmental Assessment for the Teralba Quarry Extensions*, (R Corkery & Associates, November 2011). The Project Approval was granted for the 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 location of the approved activities on site are shown in Figure 2.3. The activities include:

- Conglomerate extraction (blasting and excavation) in the Southern Extraction Area Stage 1A and 1B.
- Processing Operations (size reduction, screening and blending) occurs in the processing plant.
- On-site load and haul operations use off-road trucks on the quarry road network transporting primary-crushed rock to the processing plant.
- Off-site road transport of products.
- Vehicle/equipment maintenance and ancillary activities and stores on-site.
- Administration and product despatch.
- Progressive rehabilitation and maintenance of the disturbed areas of the quarry site.

The sequence plan for extraction of resource from the Teralba Quarry is as follows:

- Year 1 (2013) – Suspend extraction in Mid Pit Extraction Area;
- Years 2 to 9 (2014 to 2021) – Southern Extension Area to 20mAHD - Stage 1A to 1C (see Figure 1)
- Years 10 to 22 (2022 to 2035) – Complete extraction in Mid Pit Extraction Area and commence Northern Extension.

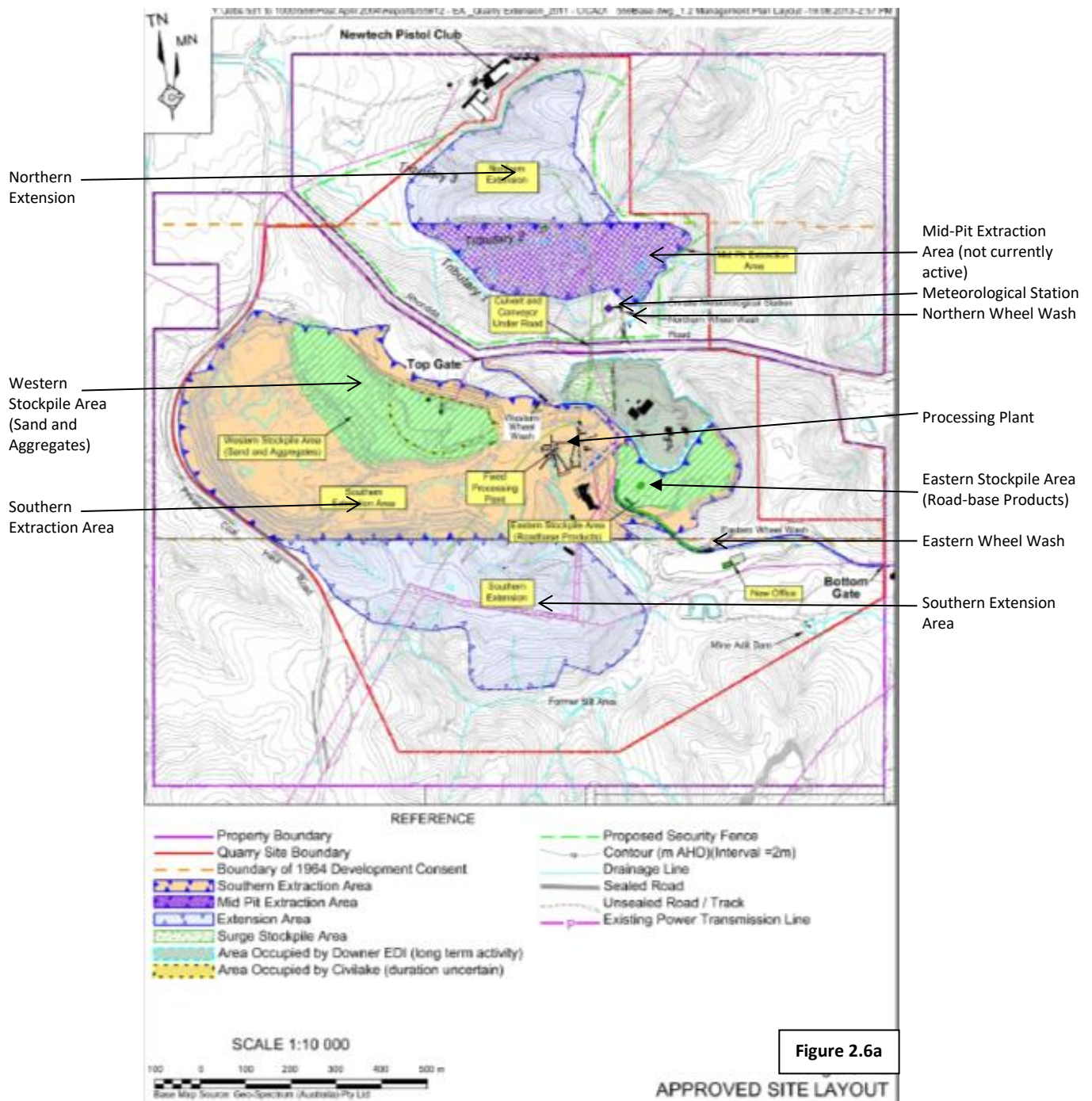


Figure 2.6a: Teralba Quarry – location of approved activities



Figure 2.6b: Teralba Quarry Southern Extraction Area and silt cells

3.0 APPROVALS AND LICENCES

The Teralba Quarry was operated in accordance with Development Consent (DA 130/42) granted by the Lake Macquarie Municipal Council on 8 May 1964 until the granting of the current Project Approval 10_0183 under Part 3A of the *Environmental Planning and Assessment Act 1979*, on 22 February 2013. Development Consent DA 130/42 was surrendered on 31 December 2013.

3.1 Project Approval – 10_0183

The Teralba Quarry Extension was declared a Major Project under Part 3A of the *Environmental Planning and Assessment Act 1979*, as a development described in clause 22 of Schedule 1 to State Environmental Planning Policy (Major Projects) 2005. Project Approval under the *Environmental Planning and Assessment Act 1979* section 75J for the Teralba Quarry Extension was granted to Metromix Pty Limited on 22 February 2013.

The approval for the Teralba Quarry Extension provides for the continuation and expansion of the Teralba Quarry including:

- extracting up to 1.2 Mtpa of mainly conglomerate rock;
- processing and washing of raw quarried material producing up to 1 Mtpa of quarry product including sand, aggregates and road base;
- transport of up to 1.0 Mtpa of quarry products by road;
- establishing a tunnel beneath Rhondda Road for a conveyor (for Northern Extension Area); and
- progressive rehabilitation of the site.

No Modifications to Project Approval 10_0183 occurred between February 2014 and February 2017.

3.2 Environment Protection Licence

Environment Protection Licence (EPL) No. 0536 was granted to Metromix under *Protection of the Environment Operations Act 1997* section 55, on 25 September 2000. The EPL is subject to review each 5 years as set out in *Protection of the Environment Operations Act 1997* Schedule 5 Part 3.6. The EPL is current until surrendered or revoked.

EPL 0536 Fee Based Activities are:

- Crushing, Grinding & Separating >500,000 to 2,000,000 T processed
- Land Based Extractive Activity >500,000 to 2,000,000 tonnes extracted, processed or stored

The following Notices of Variation to EPL 0536 have occurred between 2014 and 2017. A draft Variation Notice to EPL 0536 and Request for an Updated Site Plan was provided by Metromix to the EPA on 7 February 2014.

Date Variation No.	Variation to the EPL 0536
03 July 2015 / 1529551	Administrative Conditions <ul style="list-style-type: none"> • Condition A2.1 - added reference to the most recent plan of the premises Limit Conditions • Condition L2.4 - removed point 4 limits, added point 6 oil and grease limit • Condition L2.5 - licensee to provide design AEPs, EYs for dams including the number of days of event storage • Condition L3.1 - increased volumetric limit from 25 KL/ day to 200KL/day for point 5 and removed limit for point 4

Date Variation No.	Variation to the EPL 0536
	<ul style="list-style-type: none"> Condition L5.2 - removed measurement frequency from noise limit table, it should be a monitoring condition <p>Operating Conditions</p> <ul style="list-style-type: none"> Condition O6.1 - relocated bunding condition from waste section to other operating conditions <p>Monitoring Conditions</p> <ul style="list-style-type: none"> Condition M2.3 - changed point 4 monitoring frequency from special frequency to monthly Condition M2.3 - added electrical conductivity to monitoring schedule for point 5 Condition M2.3 - added oil and grease to monitoring point 6 Condition M9.1 - removed noise monitoring requirements for points 14 and 17 Condition M9.1 - changed noise monitoring frequency from yearly to twice in a year for the first year of monitoring <p>Pollution Reduction Programs</p> <ul style="list-style-type: none"> U1.1a) - added condition such that some analytes no longer need to be monitored after 1 June 2015.
07 Feb 2014 / 1512791	<ul style="list-style-type: none"> Condition A1 - Addition of scheduled activity. Condition A2 - An updated location description of the premises boundary. Condition P1 - Addition of air and water discharge and monitoring point locations. Condition L2 - Addition of concentration limits for discharges at Points 4 and 5. Condition L3 - Addition of volume limit at Point 4. Condition L4 - Addition of waste limits. Condition L5 - Addition of noise limits. Condition L6 - Addition of blast limits. Condition L7 - Addition of potentially offensive odour limits. Condition M2 - Addition of requirement to monitor concentration of pollutants discharged. Condition M3 - Addition of testing methods (concentration limits). Condition M4 - Addition of requirement to monitor noise. Condition M5 - Addition of requirement to monitor weather parameters. Condition M8 - Addition of requirement to monitor volume or mass. Condition M9 - Addition of requirement to monitor blasts. Condition R4 - Addition of requirement to prepare a noise monitoring report. Pollution Studies and Reduction Programs - Addition of assessment of metals leaving the premises

3.3 Environment Protection Licence 13015

Environment Protection Licence 13015 was transferred to Metromix on 27 July 2015 and came into effect on 31 July 2015. (The EPL 13015 was previously held by Civilake - the civil works section of Lake Macquarie City Council, for the recycling of waste concrete into road base, on an area of approximately 2.1ha adjacent to the active Teralba Quarry Southern Extraction Area, within Lot 1 DP 224037).

EPL 13015 Scheduled Activity / Fee Based Activities are:

- Resource Recovery – Recovery of General Waste Scale >0 T recovered
- Waste Storage - Waste storage – other types of waste Scale >0 T stored, processed or stored

The following Notices of Variation to EPL 13015 have occurred between July 2015 and February 2017.

Date Variation No.	Variation to the EPL 0536
	<ul style="list-style-type: none"> The limits for all general specific waste that meets all the conditions of a resource recovery exemption and any waste under threshold has been removed from the limit table located in Condition L2.1.

Date Variation No.	Variation to the EPL 0536
14 Oct 2015 / 1533944	<ul style="list-style-type: none"> • Addition of Condition L2.2 - outlining authorised amounts • Addition of Condition L2.3 - setting the authorised amount of waste permitted on the premise at a limit of 37000 tonnes at any one time. • A conversion of the licence has taken place due to a computer software upgrade at the EPA. The upgrade has resulted in some minor changes to headings and formatting and the deletion of a number of redundant conditions stating "Not applicable".
21 July 2015 / 1519482	<ul style="list-style-type: none"> • All conditions previously marked as "not applicable" have been removed from the licence. As such, some condition numbers have changed. • Environment Protection Licences now have standard headings for all conditions, as such some of the conditions in this licence now appear under different headings.

3.4 Water Licence

A Bore Licence No. 20BL173206 was issued on 12 October 2012 to Metromix under the *Water Act 1912* section 115, for the purpose of dewatering (groundwater) Industrial – Sand and Gravel on Lot 2 DP 224037 Parish of Teralba, County Northumberland. The volume of groundwater extracted from the works authorised by the Bore Licence shall not exceed 1407ML in any 12month period commencing 1 July to 30 June.

4. AGENCY CONSULTATION

4.1 Department of Planning and Environment

DP&E responded to the letter provided for consultation in accordance with Schedule 5 condition 9(b) with the following matters to be addressed during the audit:

4.1.1 Transport of product from the Teralba Quarry

DP&E requested a current assessment of compliance with Schedule 2 condition 9 – Extractive Material Transport based on the reviews of recent Annual Review documents as there have been past exceedances of the maximum allowable limit of trucks per hour from a westerly direction leaving the premises:

Project Approval 10_0183 Schedule 2 condition 8 and 9 specifies the truck movements approved for transport of extracted material:

Extractive Material Transport											
9	The Proponent shall limit the total hourly truck dispatch rates from the site to the levels shown in Table 1. Table 1 – Truck Dispatch Hours										
	<table><tr><td>Dispatch Period</td><td>Max Hourly Dispatch</td></tr><tr><td>6:00am – 7:00 am</td><td>Up to 28 loaded trucks</td></tr><tr><td>7:00am – 6:00pm</td><td>Up to 20 loaded trucks</td></tr><tr><td>6:00pm - 5:00am</td><td>Up to 6 loaded trucks</td></tr><tr><td>5:00am - 6:00am</td><td>Up to 12 loaded trucks</td></tr></table>	Dispatch Period	Max Hourly Dispatch	6:00am – 7:00 am	Up to 28 loaded trucks	7:00am – 6:00pm	Up to 20 loaded trucks	6:00pm - 5:00am	Up to 6 loaded trucks	5:00am - 6:00am	Up to 12 loaded trucks
	Dispatch Period	Max Hourly Dispatch									
	6:00am – 7:00 am	Up to 28 loaded trucks									
	7:00am – 6:00pm	Up to 20 loaded trucks									
	6:00pm - 5:00am	Up to 6 loaded trucks									
	5:00am - 6:00am	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.											

The number of truck movements associated with the product transport activities and restricted time frames specified in the Project Approval Schedule 2 conditions 9, are recorded daily by Metromix at the weighbridge on the Truck Movement Reporting Forms.

The number of laden trucks dispatched from the Teralba Quarry during January 2016 to February 2017 was compliant with Project Approval 10_0183 Schedule 2 condition 8 and 9 requirements.

Between January 2014 and December 2015, a small number of non-compliances with the truck dispatch time limits was recorded by Metromix.

Table 4.11.5 shows the number of exceedances recorded for trucks leaving the Teralba Quarry site over each calendar year.

Table 4.11.5: Exceedance of Truck Numbers Leaving Teralba Quarry January 2014 to February 2017

Time Period	Eastwards Max daily / Hourly				Westwards Max daily / Hourly				Daily Total	Max. Daily Total
	6am to 7am	7am to 6pm	6pm to 6am	Daily Total	5am to 6am	6am to 7am	7am to 6pm	6pm to 5am		
2014	0	5 ¹	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	1 ²	0	0
2016	0	0	0	0	0	0	0	0	0	0
Approved Limits	Hourly 8	Daily 85 Hourly 8	0	Daily Total 85	Hourly 12	Hourly 28	Daily 220 Hourly 20	Daily 66 Hourly 6	Daily Total 241	326

¹ 20 March, 29 May, and June 2014 – 9 truck movements in one hour occurred through Teralba between 7.00am and 6.00pm (approved truck movements between 7am and 6.00pm up to 8 loaded trucks per hour) on five (5) occasions. The total number of trucks despatched during the calendar year 2014, was 21,918 of which the five (5) non-compliances over the 12month period.

- ² 26 March 2015 - 7 trucks per hour travelled westward along Rhondda Road between 6.00pm and 5.00am (approved truck movements up to 6 loaded trucks per hour) on one (1) occasion. The extra truck movement was a result of one driver adjusting his departure time to comply with his mandatory 10hour rest break. The total number of trucks despatched during calendar year 2015 was 21,019, with only the one non-compliance.

No complaints were received by Teralba Quarry between January 2014 and February 2017 in relation to the trucks leaving the quarry site when the exceedance of the approved truck numbers were recorded.

4.1.2 Biodiversity Offsets

DP&E requested a current assessment of compliance with Schedule 3 condition 53 - Long-term security of offsets based on the reviews of recent Annual Reviews - the DP&E acknowledged the current negotiations regarding bio-banking with OEH, but requested evidence of continued consultation with OEH and current status of securing offsets.

A proposed offset area of Spotted Gum – White Mahogany – Grey Ironbark Open Forest and woodland community to satisfy Project Approval 10_0183 Schedule 3 condition 52 for the development of the Northern and Southern Extension Areas is to be set aside through a covenant on the land title. Clearance of 25.9ha of forest/woodland vegetation will occur for the development of the Northern and Southern Extension Areas. The proposed offset area would represent a ratio of approximately 4.6:1 of biodiversity offset compared with the proposed area of forest/woodland vegetation to be removed. The long-term security of the biodiversity assets will be described in the *BioBanking Management Plan* for the Teralba Quarry, following the approval of a conservation agreement (or an alternative measure) for the long-term security of the biodiversity assets.

The requirements of Project Approval Schedule 3 condition 53 in relation to long term security of offsets was to be completed within 6 months of approval of the Landscape Management Plan. The Landscape Management Plan was approved by DP&E on 19 September 2014. Metromix and its consultants have liaised with DP&E and OEH between 2014-2017 to develop a mechanism for securing the Biodiversity Offset Area for the Teralba Quarry, with correspondence and numerous discussions held with DP&E and OEH representatives regarding the documentation required in relation to registration of an agreement pursuant to section 69F of the National Parks and Wildlife Act 1974. DP&E granted extensions to the time for development of a conservation agreement (or an alternative measure) following the outcomes of the numerous meetings/correspondence with the agencies and requests from Metromix to align lodgement of the bond with securing the offsets under a Bio-banking Agreement with the OEH.

A Bio-banking Agreement has been delayed as OEH advised that a Bio-banking application was inhibited under the *Threatened Species (Biobanking) Regulation 2008* and this matter was due to be addressed in the broader changes of proposed amendments to the NSW biodiversity legislation, anticipated to be implemented by June 2017.

The Secretary of DP&E stated *“the Department was prepared to provide extensions to the relevant conditions of approval until the regulations under the proposed Biodiversity Conservation Act are commenced”* in correspondence dated 13 July 2016.

4.2 Other Agencies

No requests for specific matters to be addressed during the audit were received from EPA / OEH, Lake Macquarie City Council or DPI-Water (NSW Office of Water).

5. REVIEW OF ENVIRONMENTAL MANAGEMENT

A summary of the status of consent conditions for the Teralba Quarry under the Project Approval 10_0183 and EPL 0536, and implementation of the requirements of the conditions are presented below. (Summary Tables of compliance are provided in Attachments A to D of this report).

5.1 Environmental Management

[Project Approval 10_0183 Schedule 5]

5.1.1 Environmental Management Strategy

[Project Approval 10_0183 Schedule 5 condition 1]

The Environmental Management Strategy was prepared to satisfy Project Approval 10_0183 Schedule 5 condition 1 and submitted to DP&I in August 2013. The Environmental Management Strategy was approved by DP&I on 16 January 2014. The Environmental Management Strategy is an over-arching document to specific environmental management plans prepared to guide operations within the Teralba Quarry, including:

- Noise Management Plan (approved by DP&I on 16 January 2014).
- Blast Management Plan (approved by DP&I on 10 October 2013)
- Air Quality Monitoring Program (approved by DP&I on 10 October 2013)
- Transport Management Plan (approved by DP&I on 10 October 2013)
- Waste Management Plan (approved by DP&I on 10 October 2013)
- Water Management Plan (approved by DP&E on 20 December 2016).
- Aboriginal Cultural Heritage Management Plan (approved on 19 September 2014)
- Landscape Management Plan (approved by DP&I on 16 January 2014).
- Lower Level Extraction Management Plan (approved by DP&E on 23 November 2016).

The Environmental Management Strategy generally addresses the key elements of ISO 14001.

Table 4.1.1 Environmental Management Strategy vs AS/NZS ISO14001 Elements

ISO 14001 Element	Environmental Management Strategy section
4.3.1 Environmental Aspects	Section 4 - Objectives and Outcomes
4.3.2 Legal and Other Requirements	Section 3 - Legal and Other Requirements
4.3.3 Objectives and Targets	Section 4 - Objectives and Outcomes
4.3.4 Environmental Management Programs	Section 3.3 - Environmental Management Plans
4.4.1 Structure and Responsibility	Section 14 – Roles and Responsibilities
4.4.2 Training Awareness and Competence	Section 12 – Competence Training and Awareness
4.4.3 Communication	Section 111 – Stakeholder and Community Consultation
4.4.7 -Emergency Preparedness and Response	Section 11 - Emergency Response
4.5.1 Monitoring and Measurement	Section 5 - Monitoring
4.5.2 Non-conformance, Corrective Action	Section 6 – Evaluation of Compliance and section 7 Corrective and Preventative Actions

5.1.2 Conclusion

Environmental Management Strategy **Status:** **Compliant**

The approved Environmental Management Strategy prepared for Teralba Quarry provides a sound basis for the management of the Teralba Quarry activities when combined with the implementation of the approved Environmental Management Plans. The Environmental Management Strategy also addresses the majority of the elements of ISO 14001.

5.2 Management Plans

[Project Approval 10_0183 Schedule 5 condition 3]

5.2.1 Environmental Management Plans

The management plans required for the Teralba Quarry to satisfy Project Approval 10_0183 are:

Schedule 3, condition 4	Lower Level Extraction Plan (LLEP)
Schedule 3, condition 8	Noise Management Plan (NMP)
Schedule 3, condition 16	Blast Management Plan (BMP)
Schedule 3, condition 20	Air Quality Monitoring Program (AQMP)
Schedule 3, condition 26	Water Management Plan (WaterMP)
Schedule 3, condition 44	Transport Management Plan (TMP)
Schedule 3, condition 57	Landscape Management Plan (LMP)
Schedule 3, condition 48	Waste Management Plan (WasteMP)
Schedule 3, condition 49	Heritage Management Plan (HMP)

5.2.2 Management Plan Development

[Project Approval 0_0183 Schedule 5 condition 3]

The management plans prepared for the Teralba Quarry, have been developed generally in accordance with the requirements of the specific requirements in Project Approval 10_0183 Schedule 3 conditions. Table 5.2.2 identifies the section(s) of each management plan that addresses the Project Approval 10_0183 Schedule 5 condition 3 components.

Table 5.2.2: Summary of the Management Plan sections addressing Project Approval 10_0183 Schedule 5 condition 3 components.

Project Approval 10_0183 Schedule 5 condition 3		Management Plan (section reference)	Status
The Proponent shall ensure that the Management Plans required under this approval are prepared in accordance with any relevant guidelines, and include:			
(a) detailed baseline data	Baseline data for noise, air quality, surface water, traffic, soils, biodiversity/flora and fauna, and heritage is presented in the Environmental Assessment for the Teralba Quarry Extension - section 5 (2011).		Administrative Non-Compliant

Project Approval 10_0183 Schedule 5 condition 3		Management Plan (section reference)	Status
		Refer to the Environmental Assessment (2011) for NMP, BMP, AQMP, WaterMP, TMP, LMP, WasteMP and HMP baseline data not included in each management plan.	
(b) description of: (i) statutory requirements (including approvals, licence or lease conditions)		LLEP – Section 4 Legal and Other Requirements NMP – Section 4 Legal and Other Requirements BMP – Section 4 Legal and Other Requirements AQMP – Section 4 Legal and Other Requirements WaterMP – Section 4 Legal and Other Requirements TMP – Section 4 Legal and Other Requirements LMP – Section 4 Legal and Other Requirements WasteMP – Section 4 Legal and Other Requirements HMP – Section 7 Artefact Reporting Procedure	Compliant
(ii) limits or performance measures/criteria (iii) specific performance indicators		LLEP – Appendix A – Spontaneous Combustion Management Plan Section 4 Trigger Action Response Plans NMP – Project Approval 10_0183 Sched 3 condition 5 BMP – Project Approval 10_0183 Sched 3 condition 9 AQMP – Section 7.3 Ambient Air Quality WaterMP – Section 7.1.5 Surface Water Quality and Section 7.2.3 Groundwater Quality TMP – Section 7 Control Measures LMP – Section 5 Objectives and Outcomes WasteMP – Section 5 Objectives and Outcomes HMP – Section 7 Artefact Reporting	Compliant
(c) measures to be implemented to comply with the statutory limits, or performance measures /criteria		LLEP – Appendix A – Spontaneous Combustion Management Plan Section 4 Trigger Action Response Plans NMP – Section 8 Control Measures BMP – Section 8 Control Measures AQMP – Section 8 Control Measures WaterMP – Section 7 Site Water Management and section 8 Erosion and Sediment Control TMP – Section 7 Control Measures LMP – Section 12 Landscape Management Measures WasteMP – Section 9 Control Measures HMP – Section 7 Artefact Reporting Procedure	Compliant
(d) program to monitor and report (i) impacts and environmental performance; (ii) effectiveness of management measures		LLEP – section 6 Spontaneous Combustion Identification NMP – Section 9 Noise Monitoring Protocols and Evaluation of Compliance BMP – Section 9 Monitoring and Section 10 Evaluation of Compliance AQMP – Section 9 Air Quality Monitoring and Section 10 Evaluation of Compliance WaterMP – Section 9 Water Monitoring Program TMP – Section 8 Performance and Monitoring LMP – Section 15 Monitoring and Evaluation WasteMP – Section 10 Monitoring and Evaluation of Compliance HMP – Section 7 Artefact Reporting Procedure	Compliant
(e) contingency plan		LLEP – Environmental Management Strategy NMP – Section 10 Corrective and Preventative Actions BMP – Environmental Management Strategy AQMP – Section 11 Corrective and Preventative Actions WaterMP – Section 11 Corrective and Preventative Actions TMP – Section 7 Control Measures and section 8 Performance and Monitoring LMP – Section 12.1 Landscape Management Measures	Compliant

Project Approval 10_0183 Schedule 5 condition 3	Management Plan (section reference)	Status
	WasteMP – Environmental Management Strategy HMP – Environmental Management Strategy	
(f) program to investigate and implement ways to improve environmental performance of the project over time	LLEP – Not applicable NMP – section 7 Surrounding Residences and Potential Noise Related Impacts BMP – Section 8 Control Measures AQMP – Section 11 Corrective and Preventative Measures WaterMP – Section 11 Corrective and Preventative Actions TMP – Section 7 Control Measures and section 8 Performance and Monitoring LMP – Section 12 Landscape Management Measures WasteMP – Section 9 Control Measures HMP – Section 7 Artefact Reporting Procedure	Compliant
(g) protocol for managing and reporting any: (i) incidents; and	LLEP – Section 9 Incident Reporting NMP – Section 11.2 Incident Reporting BMP – Section 13 Incidents AQMP – Section 14 Incident Reporting WaterMP – Section 13 Incident Reporting TMP – Section 10 Incident Reporting LMP – Section 19 Incident Reporting WasteMP – Section 11.2 Incident Reporting HMP – Section 7 Artefact Reporting Procedure and section 9 Plan Review	Compliant
(ii) complaints;	LLEP – Section 8 Complaints Handling and Response NMP – Section 11.4 Community Complaints and Communication BMP – Section 12 Complaints Handling and Response AQMP – Section 12 Complaints Handling and Response WaterMP – Section 12 Complaints Handling and Response TMP – Section 9 Complaints LMP – Section 18 Complaint Handling and Response WasteMP – Section 11.4 Complaint Handling and Response HMP – Section 7 Artefact Reporting Procedure and section 9 Plan Review	Compliant
(iii) non-compliances with statutory requirements;	LLEP – Section 7 Corrective and Preventative Actions NMP – Section 9 Noise Monitoring Protocols and Evaluation of Compliance BMP – Section 10 Evaluation of Compliance AQMP – Section 10 Evaluation of Compliance WaterMP – Section 10 Evaluation of Compliance TMP – Section 8 Performance and Monitoring LMP – Section 17 Evaluation of Compliance WasteMP – Section 10 Monitoring and Evaluation HMP – Section 7 Artefact Reporting Procedure	Compliant
(iv) exceedances of the impact assessment criteria and/or performance criteria;	LLEP – Section 7 Corrective and Preventative Actions NMP – Section 10 Corrective and Preventative Actions BMP – Section 10 Evaluation of Compliance AQMP – Section 10 Evaluation of Compliance WaterMP – Section 10 Evaluation of Compliance TMP – Section 10 Incident Reporting LMP – Section 11 Rehabilitation and Biodiversity Offset Risks WasteMP – Section 12 Reporting HMP – Section 7 Artefact Reporting Procedure	Compliant
(h) a protocol for periodic review of the plan	LLEP – Section 10 Plan Review NMP – Section 12 Plan Review	Compliant

Project Approval 10_0183 Schedule 5 condition 3	Management Plan (section reference)	Status
	BMP – Section 15 Plan Review AQMP – Section 16 Plan Review WaterMP – Section 15 Plan Review TMP – Section 12 Plan Review LMP – Section 21 Plan Review WasteMP – Section 13 Plan Review HMP –Section 9 Plan Review	

5.2.3 Conclusion

The environmental management plans prepared for the Teralba Quarry to support the Environmental Management Strategy, have been developed generally in accordance with the requirements of Project Approval 10_0183 Schedule 5 condition 3. All required management plans have been submitted to the DP&I / DP&E and have been approved.

5.3 Noise Management

[Project Approval Schedule 3 conditions 5 to 8]

5.3.1 Environmental Assessment

[Environmental Assessment for the Teralba Quarry Extensions, section 5.6, November 2011]

[Environmental Assessment for the Teralba Quarry Extensions, Specialist Consultant Studies Compendium Volume 2 Part 6 Noise and Vibration Assessment, November 2011]

The existing quarry operations are in a location shielded by the local topography that limits adverse noise impacts on the local community. Background noise levels established around the Teralba Quarry and project-specific noise criteria were assessed and it was concluded that all noise criteria would be satisfied during operations.

The Environmental Assessment Specialist Consultant Studies Compendium Volume 2 Part 6 Noise and Vibration Assessment, concluded that impacts of noise from the Teralba Quarry on the surrounding community, was predicted to be negligible and if assuming cumulative noise levels from surrounding noise sources, were at the limit of the amenity criterion, when combined with the worst case predicted noise emissions from Teralba Quarry, there would be less than 1dB(A) increase in the total noise received by the nearest sensitive receivers.

The specialist study also concluded *“The results of the noise modelling and assessment have shown that there will be no adverse impacts as a result of the night time loading of trucks, trucks transporting quarry products and noise and vibration associated with blasting. There may be some minor impacts at some residences in Railway Street as a result of noise from trucks using the eastern entrance to the quarry. The “Maximum Cumulative Noise Increase” calculation of the addition of the worst case predicted noise level from Teralba Quarry with the maximum allowable level of the amenity criterion for that locality.”*

The worst predicted noise levels for the nearest receivers ranged from 19.6 to 45.6 LA_{eq}(15 minutes) for daytime (amenity Criteria is 55 LA_{eq}(15 minutes)) and 28.5 to 35.6 LA_{eq}(15 minutes) for evening (amenity 45 LA_{eq}(15 minutes)).

The results of the noise assessment indicate that there will be no adverse impacts as a result of the night-time loading of trucks, the transportation of quarry products by trucks, and/or noise and vibration associated with blasting.

5.3.2 Statements of Commitment – Noise and Vibration

[Environmental Assessment for the Teralba Quarry Extensions, section 6, November 2011]

[Project Approval 10_0183 Appendix 3]

Statements of Commitment in relation to noise management expressed in the Environmental Assessment for the Teralba Quarry Extensions (2011) section 6, and Project Approval 10_0183 Appendix 3 for the Teralba Quarry project were:

SoC No.	Statement of Commitment – Noise Consolidated Project Approval 10_0183	Comment on Implementation	Compliance
10	Noise and Vibration		
10.1	Ensure all mobile earthmoving equipment used on site is not fitted with high-frequency reversing alarms and is regularly serviced.	Mobile earthmoving equipment used on site is fitted with low-frequency reversing alarms.	Compliant
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) when new or temporary equipment is brought to site.	Spectrum Acoustics monitored sound power levels and frequency spectra of equipment on-site in 2016 and assessed consistency with nominated noise emissions in Spectrum Acoustics Section 6 (2011).	Compliant
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.	The eastern side of the Southern Extension active extraction face is retained providing a topographic barrier between operating earthmoving equipment and residences to the east.	Compliant
10.4	Construct a 5m high bund on the eastern edge of the Mid Pit Extraction Area during Mid Pit Extraction operations.	A 5m wall on Dam K on the eastern edge of the Mid Pit Extraction Area provides a barrier for any operations in the Mid-Pit Extraction Area. No Mid-Pit extraction activities have been conducted since August 2013.	Compliant
10.5	Limit transportation noise by ensuring: – 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.	All vehicles transporting product from the Teralba Quarry are required to comply with RMS noise limits, trucks transporting products from the quarry between 10:00pm and 6:00am are fitted with airbag suspension and drivers are required to comply with the Drivers Code of Conduct.	Compliant
10.6	Commission a noise monitoring program that comprises: – attended noise monitoring within the first 3 months of operations in the Southern and Northern Extensions; and – General noise monitoring, biannually during the first year of operation in the Southern and Northern Extensions, and further monitoring when substantiated complaints are filed.	Noise monitoring was outlined in the Noise Management Plan section 9. Operations commenced within Stage 1A of Southern Extension on 24 December 2014. No development / activities had commenced in the Northern Extension Area at the date of this audit (February 2017).	Compliant
		Attended noise monitoring was not undertaken strictly in accordance with the Statement of Commitment or the Noise Management Plan during 2014 and 2015. Attended noise monitoring was undertaken in September 2014, July 2015 and twice during 2016 (August and November).	Administrative Non-Compliance

SoC No.	Statement of Commitment – Noise Consolidated Project Approval 10_0183	Comment on Implementation	Compliance
10.7	Include a summary of all noise monitoring results in the AEMR.	Noise monitoring results are summarised in the Annual Returns and Noise Monitoring Reports are attached in Appendix 2.	Compliant
10.8	Ensure all trucks departing the Project Site via the bottom gate travel at speeds <20km/hr.	Trucks departing the Teralba Quarry site via the bottom gate onto Railway Street between the Teralba Business Park and Rhondda Road, are required to travel at speeds <20km/hr, in accordance with the Drivers Code of Conduct.	Compliant Ongoing

5.3.3 Noise Management Plan – Control Measures

[Project Approval 10_0183 Schedule 3 condition 8]

The Noise Management Plan prepared to satisfy Project Approval Schedule 3 condition 8 was submitted to DP&I in August 2013 and approved on 16 January 2014.

Control measures and commitments addressed in the Noise Management Plan section 8, to satisfy the Project Approval 10_0183 Schedule 3 condition 8 are:

Project Approval Schedule 3 condition 8 Requirement and Control Measure	Status	Compliance Status
The Proponent shall prepare and implement a Noise Management Plan for the project to the satisfaction of the Director-General. This plan must:		
(a) be submitted for approval to the Director-General within 4 months of the date of this approval;	The Noise Management Plan was submitted to DP&I on 31 July 2013 and the revised Plan approved on 16 January 2014.	Compliant
(b) describe the measures that would be implemented to ensure: <ul style="list-style-type: none"> 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 	<p>Noise Management Plan section 8 describes Control Measures for noise from the quarry and transport operations, and management under adverse weather conditions.</p> <p>Section 9 describes Noise Monitoring Protocol and Evaluation of Compliance.</p>	Compliant
(c) describe the proposed noise management system in detail; and	The Noise Management Plan describes the overall noise management system.	Compliant
(d) include a monitoring program that: <ul style="list-style-type: none"> 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 	<p>Noise Management Plan Section 9 describes Noise Monitoring Protocol and Evaluation of Compliance including of regularly evaluating the performance of the project, including noisy individual items of plant, such as haulage trucks and the bulldozer.</p> <p>Noise Management Plan section 9 addresses Corrective and Preventative Actions and section 11 addresses Information and Communication and Incident Reporting</p>	Compliant
Noise Management Plan Control Measures		

<u>Operating Hours</u> Metromix will ensure the operating hours and conditions identified in <i>PA Condition 3(6)</i> are strictly complied with. All operating hours will be recorded on a register.	Hours of operation of the Teralba Quarry activities have occurred in accordance with Project Approval Schedule 3 condition 6, between 2014 and 2017.	Compliant
<u>Quarry Operations</u> The Southern Extension will be extracted in a manner that the active extraction face is retained on the eastern side to provide a topographic barrier between operating earthmoving equipment and the residences to the east. The Northern Extension has been designed to ensure all extraction occurs on the western side of the prominent north-south ridge north of Rhondda Road. The retained natural topography will provide significant acoustic attenuation between the Northern Extension and the residences to the east	<u>Statement of Commitment 10.3</u> The eastern side of the Southern Extension active extraction face has been retained providing a topographic barrier between operating earthmoving equipment and residences to the east. No development or activities had occurred in the Northern Extension Area, at the date of this audit (February 2017).	Compliant Ongoing
Earthmoving equipment must not be operated in elevated areas of the quarry before 9:00am and/or during gentle breezes from the west.	Earthmoving equipment is not operated in elevated areas of the quarry before 9:00am or during wind speed >3m/s from the west and northwest.	Compliant
<u>Equipment Maintenance</u> Noise suppression equipment on plant will be maintained at all times and ensure defective plant is not operated until it is fully repaired	Independent noise monitoring of the mobile earthmoving equipment within the Teralba Quarry has occurred by Spectrum Acoustics to ensure the sound power levels are comparable with the levels nominated in the approved Noise Management Plan.	Compliant
<u>Transport Operations</u> All trucks under the control of Metromix, comply at all times, with the RTA's noise limits.		Compliant
Only those trucks under the control of Metromix, its shareholders and approved contractors, and fitted with airbag suspension, are used to transport products from the quarry between 6:00pm and 6:00am Monday to Saturday.	Trucks used to transport products from the Teralba Quarry between 6:00pm and 6:00am Monday to Saturday are under the control of Metromix.	Compliant
All drivers to sign a Code of Conduct to ensure high standard of driver performance including the need to, avoid use of exhaust brakes in built-up areas and travel at required speeds.	All drivers must sign a Metromix Code of Conduct to ensure high standard of driver performance if operating to and from the Teralba Quarry.	Compliant
<u>Adverse Weather Conditions</u> The key adverse meteorological condition that influences the propagation of noise from on-site operations towards the residences in Teralba is a gentle breeze <3m/s from the west and northwest and more specifically, 260° - 290° and 290° - 320°. If monitoring does indicate that the noise compliance criteria are being approached under these meteorological conditions, the Quarry Manager will instruct that those activities are relocated to topographically lower areas	Meteorological conditions are monitored by the weather station on-site and the noise monitoring surveys report wind speed and direction in the Noise Monitoring Reports Table 5 for each monitoring period. If monitoring indicates wind speed and/or direction are approaching the critical meteorological conditions, the Quarry Manager will instruct the operators to modify the extraction operations to ensure compliance with the noise criteria.	Compliant

5.3.4 Noise Criteria

[Project Approval 10_0183 Schedule 3 conditions 5]

[Environment Protection Licence 0536 conditions L4.1 to L4.8]

The noise assessment criteria for the Teralba Quarry are specified in the Project Approval 10_0183 Schedule 3 condition 5 and Environment Protection Licence 0536 condition L5.1:

Location	Day Shoulder 6am - 7am	Day 7am - 6pm	Evening 6pm - 10pm	Night 10pm - 6pm
	LA eq(15min)	LA eq(15min)	LA eq(15min)	LA eq(15min) LA eq(1min)
EPL-A 22 Awaba St Teralba	38	38	37	35 45
EPL-B 153 Railway St Teralba	42	46	36	35 45
EPL-C 8 Rhondda Rd Teralba	42	42	35	35 45
EPL-D 26 Rhondda Rd Teralba	35	35	35	35 45
EPL-E 57 Victoria Ave Teralba	35	35	35	35 45
EPL-F 63 Victoria Ave Teralba	35	35	35	35 45
EPL-H 52 School Rd Teralba	37	38	38	35 45

5.3.5 Noise Monitoring Program

[Project Approval 10_0183 Schedule 3 conditions 8(d)]

The Noise Management Plan section 9 indicates that independent monitoring at the locations nominated in EPL 0536 condition P1.4 would be undertaken during the first 2 years of operations at 6 monthly intervals coinciding with wind blowing in a predominantly eastern and western direction. The frequency of monitoring would then revert to annual monitoring during a period of wind blowing from the western quadrant towards residences in Teralba.

The EPL 0536 condition L5 Variation 1529551 (dated 3 July 2015) for the Teralba Quarry Extension included noise criteria and revised noise monitoring requirements for the project.

Attended noise monitoring was not undertaken strictly in accordance with the Statement of Commitment 10.6 or the Noise Management Plan during 2014 and 2015. Attended noise monitoring was undertaken twice during 2016 (August and November).

An independent noise consultant is to undertake noise monitoring (for inclusion of the Noise Monitoring Reports and results in the Annual Review) that evaluates and reports on the effectiveness of the noise management system on the Teralba Quarry site.

Each noise monitoring survey results will be assessed, reviewing:

- the meteorological data for the corresponding survey period;
- the locations and duration of activities on site during the noise monitoring period; and
- data on activities at the nearby asphalt plant (operated by Downer within the Teralba Quarry lease area).

In the event that the noise results suggest the quarry is the source of the any elevated noise levels, the Teralba Quarry Manager will initiate its corrective and preventative action plan.

5.3.6 Noise Monitoring Results

[Project Approval 10_0183 Schedule 3 condition 8(d)]

[Environment Protection Licence 0536 Condition L5]

Attended noise monitoring was conducted during night-time, shoulder and daytime periods by Spectrum Acoustics to address the requirements of Project Approval 10_0183 Schedule 3 condition 8(d), Project Approval 10_0183 Appendix 3 - Statement of Commitment 10.6, and EPL 0536 condition L5 in September 2014, July 2015, August 2016 and November 2016.

Monitoring data from times where Teralba Quarry operations were audible at the monitoring locations, were analysed by Spectrum Acoustics using the “*Evaluator*” software. The analysis showed the noise from the Teralba Quarry activities did not contain any tonal, impulsive or low frequency components as per definitions of “*modifying factor corrections*” in the NSW *Industrial Noise Policy*.

The noise monitoring results collected between 2014 and 2016 show that under the operational and atmospheric conditions at the time of monitoring, noise emissions from Teralba Quarry did not exceed the relevant criterion at any monitoring location during any part of the survey.

During the night time monitoring Teralba Quarry was inaudible, therefore, the L1_(1 min) noise criteria of 45 dB(A) was not exceeded at any monitoring location.

5.3.7 Conclusion

The Noise Management Plan prepared to satisfy Project Approval Schedule 3 condition 8 was approved by DP&I on 16 January 2014. Noise monitoring conducted in September 2014 and July 2015 confirmed that the noise emissions from the Teralba Quarry operations received at sensitive receivers identified in EPL 0536 condition P1.4, were consistent with the predicted noise assessment criteria in the Environmental Assessment (2011), and compliant with the Project Approval 10-0183 Schedule 3 and EPL 0536 conditions. Subsequent noise monitoring in August 2016 and November 2016 have also demonstrated compliance with the noise assessment criteria.

5.4 Blast Management

[Project Approval 10_0183 Schedule 3 conditions 9 to 16]

5.4.1 Environmental Assessment

[Environmental Assessment for the Teralba Quarry Extensions, November 2011]

[Environmental Assessment for the Teralba Quarry Extensions, Specialist Consultant Studies Compendium Volume 2 Part 6 Noise and Vibration Assessment, November 2011]

Blasting at Teralba Quarry is low impact blasting designed principally to assist disaggregation of the conglomerate. The principal safeguards relate to blast design and the adoption of standard blasting practice which has demonstrated to be effective and not attracted any complaints over many years.

The Environmental Assessment Specialist Consultant Studies Compendium Volume 1 Part 6 concludes that impacts of blasting at the Teralba Quarry on the surrounding community, is predicted to be negligible. Potential impacts of blasting can be kept within the Project Approval and EPL conditions and guidelines, provided the maximum instantaneous charge (MIC) is kept below 60kg when blasting at 700m from residences.

The closest point of blasting from the Southern Extension approved extraction area to the nearest residence in the next 10 years will be approximately 1.2km from the blast locations. Blasting north of Rhondda Road when the Northern Extension quarrying commences, would be at distances of approximately 900m from the nearest residences for the life of the project.

5.4.2 Statements of Commitment – Blast Management

[Environmental Assessment for the Teralba Quarry Extensions, section 6, November 2011]
[Project Approval 10_0183 Appendix 3]

Statements of Commitment in relation to blast management expressed in the Environmental Assessment for the Teralba Quarry Extensions (November 2011) and Project Approval 10_0183 Appendix 3 for the Teralba Quarry project were:

SoC No.	Statement of Commitment – Blasting Project Approval 10_0183	Comment on Implementation	Compliance
10.9	Review blast designs and modify, if required, when blasting within 500m of any residence.	No blasts have occurred at the Teralba Quarry within 500m from any residence.	Not triggered
11.8	Schedule blasts so they do not occur during high wind situations.	Blasts are not scheduled to occur during high wind situations. Weather conditions are assessed prior to each blast to ensure high wind conditions are not occurring.	Compliant Ongoing

5.4.3 Blast Management Plan

[Project Approval 10_0183 Schedule 3 condition 16]

The Blast Management Plan prepared to satisfy Project Approval Schedule 3 condition 16 was submitted to DP&I on 6 September 2013 and approved by DP&I on 10 October 2013.

Control measures addressed in the Blast Management Plan section 8, to satisfy Project Approval 10_0183 Schedule 3 condition 16 are:

Project Approval Schedule 3 condition 16 Requirement s	Implementation Status	Compliance Status
The Proponent shall prepare and implement a Blast Management Plan for the project to the satisfaction of the Director-General. This plan must:		
(a) be submitted for approval to the Director-General within 4 months of the date of this approval	The Blast Management Plan was prepared to satisfy Project Approval submitted to DP&I on 6 September 2013 and approved on 10 October 2013.	Compliant
(b) be prepared in consultation with the Council and interested members of the local community potentially affected by blasting operations;	The Blast Management Plan was prepared in consultation with the Lake Macquarie City Council and residents of Teralba (Rhondda Road, Watkins Lane, Rodgers Street, Railway Street, Pitt Street, Myrtle Street and James Street).	Compliant
c) describe the measures that would be implemented to ensure: <ul style="list-style-type: none"> best management practice is being employed; and compliance with the relevant conditions of this approval; 	Blast Management Plan section 8 presents Control Measures and blasting best management practices.	Compliant
(d) include a road closure management plan for blasting within 500 metres of a public road, that has been prepared in consultation with Council;	Blast Management Plan section 7.2.4 states <i>“there will no need to close Rhondda Road for short periods during a blast as the closest blasting location is approx. 400m north of Southern Extension”</i> .	Not triggered

(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	Blast Management Plan section 7.2.5 addresses blast fume potential and management.	Compliant
(f) include a monitoring program for evaluating the performance of the project including: <ul style="list-style-type: none"> compliance with the applicable criteria; and minimising fume emissions from the site. 	Blast Management Plan section 9 provides blast and fume monitoring and section 10 addresses Evaluation of Compliance.	Compliant
Blast Management Plan section 8 -Control Measures		
<u>Blasting Operations</u> All blasting will be undertaken in accordance with AS 2187.2 <i>Explosive Storage, Transport and Use</i> (2006). The following key control measures will be implemented to satisfy these requirements: <ul style="list-style-type: none"> Blast design including limiting Maximum Instantaneous Charge (MIC). Drilling and loading techniques. Blasting techniques including types of explosives and detonators being used. Timing of blast (initiation sequence, timing and direction). 	Blast design (including Maximum Instantaneous Charge), drilling and loading techniques, types of explosives (ANFO-based explosive) and detonators used, and timing of blasts (in accordance with Project Approval 10_0183 Schedule 3 condition 10 and EPL 0536 condition L5.1), are undertaken and recorded for each blast, in accordance with AS 2187.2 <i>Explosive Storage, Transport and Use</i> (2006).	Compliant Ongoing
<u>Flyrock, Dust and Fume Management Measures</u> All blasting will continue to be undertaken with the adoption of the following control measures at Teralba Quarry to minimise flyrock and dust emissions from each blast: <ul style="list-style-type: none"> Control of burdens. Minimum of 1.8m of 10mm or 14mm stemming material. Metromix has worked closely with its explosive supplier to implement management measures that avoid/minimise the generation of oxides of nitrogen and hence any visible blast fumes. The key management measures adopted are: <ul style="list-style-type: none"> Control of explosive type and optimum/correct fuel content for damp and wet holes, i.e. use of a heavy ANFO-based explosive. Ensuring weathered, soft conglomerate is removed by bulldozer or excavator and not blasted. Utilising free face blasts whenever possible. Reduce the number of fully confined blasts. Maintain relatively small blasts, i.e. <10t explosive. 	Blasting control measures are adopted for each blast event to minimise the potential for flyrock and dust emissions from the blasts. The Blast Management Plan section 7.2.4 and Appendix 1 addresses flyrock impacts, section 7.2.5 addresses fume generation, and section 8.2.2 addresses dust and fume management measures.	Compliant Ongoing
<u>Management of Airblast Overpressure</u> As per AS2187.2 (2006) control measures that may be effective in reducing the impact of airblast may include one or more of the following. <ul style="list-style-type: none"> Delay intervals. Charge confinement. Burden and spacing. Blasthole deviation. Stemming – amount and type. Geological conditions. Direction of initiation. Wind and weather conditions. 	Blast Management Plan section 7.2 addresses potential blast related impacts, and each blast is initiated when control measures in AS 2187.2 <i>Explosive Storage, Transport and Use</i> (2006) have been considered and addressed where relevant. AS 2187.2-2006 section 6, 7 and 8 address Operations prior to Charging.	Compliant Ongoing

• Charge depth		
Safety Measures The Quarry Manager will be responsible to ensure that the relevant safety measures have been implemented prior to blasting within the Quarry.	Safety measures related to blasting are addressed in each relevant section of the Blast Management Plan to ensure compliance with the <i>Mine Health and Safety Act</i> and Regulations, <i>Work Health and Safety Act</i> and Regulations and <i>Explosives Act</i> and Regulations.	Noted
Property Inspections Given all surrounding residences are greater than 500m from the approved extraction areas at the Teralba Quarry where blasts will be initiated, no property inspections will be required.	No blasts initiated at the Teralba Quarry have been within 500m from any residence. No property inspections were required between 2014 and 2017.	Not triggered
Property Investigations The Quarry Manager will be responsible to ensure any claims of damage due to blasting are managed according to the requirements of PA Condition 3(13) of Project Approval 10_0183.	No claims for damage from blasting at the Teralba Quarry were received by Metromix between 2014 and 2017.	Not triggered

5.4.4 Blast Criteria and Monitoring Program

[Project Approval 10_0183 Schedule 3 condition 9]

[Environment Protection Licence 0536 condition L6]

The criteria for the overpressure and vibration impact from blasting are provided in Project Approval 10_0183 Schedule 3 condition 9 and Environment Protection Licence 0536 condition L6:

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

The blast monitoring program in the approved Blast Management Plan Table 9.1 and Figure 7.1 identify the nominated monitoring sites where airblast overpressure and ground vibration monitors are located. Each blast is monitored at two locations with blasts initiated south of Rhondda Road monitored at Sites 1 and 2 and blasts initiated north of Rhondda Road will be monitored at Sites 2 and 3.

The blast monitoring instrumentation is installed, calibrated and maintained by the blasting contractor in accordance with AS 2187.2-2006: *Explosive Storage, Transport and Use, Part 2 Use of Explosives*.

5.4.5 Blast Monitoring Results

[Project Approval 10_0183 Schedule 3 condition 16(f)]

All blasting undertaken between 1 January 2014 and 31 December 2016 occurred within the prescribed hours for blasting in Project Approval 10_0183 Schedule 3 condition 10 and EPL 0526 condition L6.1.

No complaints related to blasting were received between 1 January 2014 and 1 February 2017.

Blast Monitoring Period	Blast Overpressure and Ground Vibration Results
1 Jan to 31 Dec 2016	Thirty-nine (39) blasts were recorded between January and December 2016. No exceedence of the blast overpressure (i.e. >115dBL) or vibration criteria (i.e. >5mm/s) were recorded.

1 Jan to 31 Dec 2015	Thirty-one (31) blasts were recorded between January and December 2015. No exceedance of the blast overpressure (i.e. >115dBL) or vibration criteria (i.e. >5mm/s) were recorded. Only one blast on the 27 November 2015 registered a trigger response of 109.9dBL from the blast monitors.
1 Jan to 31 Dec 2014	Thirty-nine (39) blasts were recorded between January and December 2015. No exceedance of the vibration criteria (i.e. >5mm/s) was recorded. One exceedance of the 115dBL blast overpressure criteria occurred on 5 August 2014 (119dBL). (Airblast overpressure and ground vibration were not measured at Location 3 throughout 2014 as no extraction was undertaken in the Mid Pit Extraction Area).
1 Jan to 31 Dec 2013	Thirty-four (34) blasts were recorded between January and December 2013. No exceedance of the blast overpressure (i.e. >115dBL) or vibration criteria (i.e. >5mm/s) were recorded. One complaint was received by Division of Resources and Energy (DRE) on 15 January 2013. The monitoring results for the blast indicated blast overpressure of less than 100dBL and less than 08mm/s ppv.

All monitoring conducted for blast overpressure and ground vibration from the Teralba Quarry has demonstrated compliance with the blast criteria in Project Approval 10_0183 Schedule 3 condition 9 and EPL condition L6.3 and L6.4 between January 2014 and February 2017.

5.4.6 Conclusions

The Blast Management Plan for the Teralba Quarry operations, prepared to satisfy Project Approval 10_0183 Schedule 3 condition 16 was approved by DP&I on 10 October 2013. Blast management at the Teralba Quarry occurs in accordance with the Project Approval 10_0183 Schedule 3 conditions 9 to 16, EPL 0536 L6 conditions and AS 2187.2-2006 *Explosive Storage, Transport and Use*. The blast monitoring results between January 2014 and February 2017 indicated no exceedance of the blast overpressure or ground vibration criteria had occurred as a result of blasting at the Teralba Quarry.

5.5 Air Quality Management

[Project Approval 10_0183 Schedule 3 conditions 17 to 21]

[Statement of Commitments 11.1 to 11.18]

[EPL conditions L6.1 and L6.2]

5.5.1 Environmental Assessment

[Environmental Assessment for the Teralba Quarry Extensions, section 5.7, November 2011]

[Environmental Assessment for the Teralba Quarry Extensions, Specialist Consultant Studies Compendium Volume 2 Part 7 Noise and Vibration Assessment, November 2011]

The location of the Teralba Quarry operations reduces the potential for deposited dust levels within the surrounding area of Teralba Village, as recorded by 7 years of dust monitoring data. The air quality assessment conducted for the Environmental Assessment (2011), concluded that with the ongoing air quality control measures, PM₁₀ (24hr and annual average) and dust deposition levels would be satisfactory and satisfy relevant environmental and health based criteria.

5.5.2 Predicted Air Quality and Criteria

[Project Approval 10_0183 Schedule 3 condition 17]

Dispersion air modelling conducted for the Environmental Assessment (Specialist Consultant Studies Compendium Volume 2 Part 7) predicted that including conservative background concentrations, the annual average TSP and annual average PM₁₀ concentrations would meet DECCW (EPA) guidelines at all of the identified discrete receptors and at the boundaries of the Teralba Quarry Site.

The 24hour average PM₁₀ was predicted to exceed the guideline value of 50 µg/m³ at and just beyond the northern-most border of the Project Site but this area forms part of a neighbouring coal mining operation, that will not be used for residential purposes. Annual average deposited dust was predicted to meet the criteria at all sensitive receiving environments.

Table 5.5.2: Predicted Cumulative Air Quality Impacts (EA Nov 2011)

Residential Receptor ID	PM ₁₀ Annual Average (µg/m ³)		PM ₁₀ 24hr Average (µg/m ³)		Deposited Dust (mg/m ² /mth)	
	Incremental	Cumulative	Incremental	Cumulative	Incremental	Cumulative
A	0.4	16	0.6	40	0.2	2.1
B	0.9	16	1.4	41	0.4	2.2
C	0.2	16	1.8	42	0.0	2.0
D	0.9	16	1.2	41	0.3	2.1
E	0.7	16	0.8	40	0.2	2.1
F	0.4	16	0.5	40	0.1	2.0
G	0.1	16	0.0	39	0.0	2.0
H	0.1	16	0.0	39	0.0	2.0
I	0.1	16	0.0	39	0.0	2.0
DECCW Guideline	30 µg/m³		50 µg/m³		2 mg/m²/month incremental or 4 mg/m²/month cumulative	

5.5.3 Statements of Commitment – Air Quality

[Environmental Assessment for the Teralba Quarry Extensions, section 6, November 2011]

[Project Approval 10_0183 Appendix 3]

Statements of Commitment in relation to air quality management expressed in the Environmental Assessment for the Teralba Quarry Extensions (November 2011) and Project Approval 10_0183 Appendix 3 for the Teralba Quarry project were:

SoC No.	Statement of Commitment – Air Quality Project Approval 10_0183	Comment on Implementation	Compliance
11	Air quality		
11.1	Minimise clearing ahead of extraction activities.	Clearance of vegetation on the Teralba Quarry site is minimised ahead of extraction activities to the area required for each sub-stage of the quarry development, to reduce dust generation.	Compliant Ongoing
11.2	Minimise the construction of minor roads and access tracks for soil stripping, extraction operations and rehabilitation.	Construction of minor roads and access tracks only occur for extraction operations and rehabilitation.	Compliant 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.	During periods of high wind (typically from the western quadrant) areas that may generate dust are dampened using a water truck. Activities capable of generating dust may be curtailed. Additional water is applied to internal roads used for hauling primary raw feed.	Compliant Ongoing
11.4	Stockpile material in sheltered locations away from sensitive receptors	Raw materials are processed at the on-site plant and product stockpiles have been	Compliant Ongoing

SoC No.	Statement of Commitment – Air Quality Project Approval 10_0183	Comment on Implementation	Compliance
		established in locations away from sensitive receptors.	
11.5	Shield and/or suppress dust on conveyors and transfer points.	Mist sprays / dust suppression is installed on conveyors and transfer points on the process plant to reduce dust generation / dispersion.	Compliant Ongoing
11.6	Limit internal road dust lift off by: – 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.	Dust generation is managed in site with: <ul style="list-style-type: none"> • Internal roads maintained to reduce dust generation; • 30km/hr speed limit is enforced on all internal roads; and • spillage during truck loading and transport is minimised to ensure that product is not lost over truck sidewalls and all loads are covered during transport. 	Compliant Ongoing
11.7	Minimise dump heights from trucks, front-end loaders and conveyors.	Dump heights are minimised from trucks, front-end loaders and conveyors to reduce potential for dust generation.	Compliant Ongoing
11.8	Schedule blasts so that they do not occur during high wind situations.	Blasts are not scheduled to occur during high wind situations.	Compliant Ongoing
11.9	Cease or modify activities on dry windy days when dust plumes are visible.	During periods of high wind (typically from the western quadrant) activities capable of generating dust plumes are curtailed in the higher exposed areas.	Compliant Ongoing
11.10	Water exposed areas not covered by gravel under dry and windy conditions when dust plumes are visible.	Exposed areas are watered using a water truck as required during dry periods or high wind conditions (typically from the western quadrant) when dust plumes are visible.	Compliant Ongoing
11.11	Adopt a complaints management system where all complaints are dealt with through investigation and implementation of corrective treatments.	The complaints management system developed for the Teralba Quarry operations is provided in the Air Quality Management Plan section 12 and outlines the process for receipt and actions to be taken in the event of an air quality complaint.	Compliant Ongoing
11.12	Minimise truck queuing, unnecessary idling of trucks and unnecessary trips through logistical planning, where possible.	Planning of truck loading and transport from the Teralba Quarry site reduces the queuing of trucks on site and unnecessary idling of trucks.	Compliant Ongoing
11.13	Ensure the on-site wheel wash reduces mud tracking along Railway Street.	Wheel washes are installed prior to the exit to Railway Street from the Teralba Quarry to reduce the potential for mud tracking onto the public road.	Compliant Ongoing
11.14	Remove any mud tracking on Rhondda Road as a result of quarry movements	Wheel washes have been installed at the exit to Rhondda Road from the Teralba Quarry, to reduce the potential for mud tracking onto the public road.	Compliant Ongoing
11.15	Prepare and implement a Dust Management Plan for the quarry, within 4 months of the receipt of project approval.	Dust management is included in the Air Quality Management Plan submitted to the DP&I and approved in August 2013.	Compliant Ongoing
11.16	Minimise the impacts of greenhouse gases from diesel consumption by:	Reduce Vehicle Idling Time	Ongoing

SoC No.	Statement of Commitment – Air Quality Project Approval 10_0183	Comment on Implementation	Compliance
	<ul style="list-style-type: none"> – reducing vehicle idling time; – maintaining optimum tyre pressures; and – the optimisation of haul routes on-site to reduce transportation distance from the extraction areas to the process plant. 	<p>All operators are required to operate equipment to reduce idling time by turning engines off during lengthy periods of inactivity.</p> <p>Maintaining Optimal Tyre Pressures Optimal tyre pressures are maintained for each vehicle.</p> <p>Optimising Haul Routes Haul routes between the raw feed loading area and the processing plant on internal haul roads are progressively re-located to maintain the shortest distance and grade for haul truck travel.</p>	
11.17	<p>Minimise the impacts of greenhouse gases relating from electricity consumption by:</p> <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. 	<p>Monthly checks are conducted for all external lighting and use of Lumatrol switches activated by reduced light levels.</p> <p>Solar panels are installed on remote items of equipment to minimise the use main electrical power (e.g. entry and exit barriers at the Station Road exit).</p>	Ongoing
11.18	<p>Continue to monitor dust impacts through;</p> <ul style="list-style-type: none"> –existing five deposited dust gauges; and – on-site meteorological monitoring to record relevant parameters. 	<p>Dust deposition monitoring with five dust deposition gauges at locations identified in the Air Quality Management Plan section 9.2 (in accordance with Project Approval Schedule 3 condition 20(d) and EPL 0536 condition P1.1) and meteorological parameters (in accordance with EPL 0536 condition M4) had continued at the Teralba Quarry site.</p>	Compliant Ongoing

5.5.4 Air Quality Management Plan

[Project Approval 10_0183 Schedule 3 condition 20]

An Air Quality Management Plan was prepared to satisfy Project Approval 10_0183 Schedule 3 condition 20 and submitted to DP&I in September 2013. The Air Quality Management Plan was approved by DP&I on 10 October 2013.

Control measures and commitments addressed under the Air Quality Management Plan section 8, to satisfy Project Approval 10_0183 Schedule 3 condition 20 are:

Project Approval Schedule 3 condition 20 Requirement s	Implementation Status	Compliance Status
The Proponent shall prepare and implement an Air Quality Management Plan for the project to the satisfaction of the Director-General. This plan must:		
(a) be prepared in consultation with Council, and submitted for approval to the Director-General within 4 months of the date of this approval;	The Air Quality Management Plan was prepared in consultation with Lake Macquarie City Council and a draft copy of the Plan provided to Council for review	Compliant

	within 4 months of the date of this approval.	
<p>(b) describes the measures that would be implemented to ensure:</p> <ul style="list-style-type: none"> • 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; 	<p>Measures implemented at the Teralba Quarry are:</p> <ul style="list-style-type: none"> • consistent with best management practices effective in controlling dust from the quarry activities; • during periods of high wind speeds (typically from the western quadrant) Teralba Quarry activities capable of generating dust are curtailed in the higher exposed areas. • dust monitoring results are assessed by the Quarry Manager or Quarry Supervisor for compliance with relevant conditions. The results are summarised in the Annual Reviews. 	Compliant Ongoing
(c) describes the proposed air quality management system; and	The Air Quality Management Plan provides the air quality management system for the Teralba Quarry.	Compliant
<p>(d) includes an air quality monitoring program that:</p> <ul style="list-style-type: none"> • 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. 	<p>The Air Quality Management Plan sections 9, 10 and 11 address air quality monitoring and compliance.</p> <ul style="list-style-type: none"> • section 10 provides the protocol for evaluation of compliance; • the air quality monitoring program adequately supports the air quality management system described in the Air Quality Management Plan; • the air quality management system is evaluated and the adequacy of the system reported in the Annual Reviews. 	Compliant Ongoing
Air Quality Management Plan section 8 – Control Measures		
<p><u>Dust Control</u></p> <p>Dust generating activities in the high exposed areas are scheduled, as much as practicable, when winds are not from the western quadrant. During periods of high wind (typically from the western quadrant) activities that may generate dust are curtailed in the higher exposed areas.</p>	<p><u>Statement of Commitment 11.3</u></p> <p>During periods of high wind (typically from the western quadrant) areas that may generate dust are dampened using a water truck. Activities capable of generating dust may be curtailed. Additional water is applied to internal roads used for hauling primary raw feed.</p>	Compliant Ongoing
Additional water is applied to internal roads in use for hauling primary raw feed.	<p><u>Statement of Commitment 11.10</u></p> <p>Water truck is used on internal roads as required to control dust generation.</p>	Compliant Ongoing
Other open areas with potential to generate dust are watered using the water truck.	<p><u>Statement of Commitment 11.10</u></p> <p>Water spray on disturbed open areas is used to reduce dust generation.</p>	Compliant Ongoing
Areas within the Teralba Quarry Site that are no longer operational for extraction activities, are rehabilitated in accordance with the Landscape Management Plan.	<p><u>Landscape Management Plan, section 12</u></p> <p>Rehabilitation of the completed area of Silt Cell 2 and a section of Silt Cell 1 have progressed during 2016. Placement of soil/biomass is planned on the initial upper terminal bench in Stage 1B (North).</p>	Compliant Ongoing

<p><u>Odour Control</u> Adopt measures to avoid/minimise odorous fumes during blasting.</p>	<p><u>Blast Management Plan section 8.2.2</u> Blast Management Plan outlines key control measures to prevent/minimise blast fume generation during blasting, particularly fume containing oxides of nitrogen. No complaints related to fume/odour have been received between 2014 and 2017.</p>	<p>Compliant Ongoing</p>
<p><u>Greenhouse Gas Emission Control</u> The key actions are to be adopted to minimise the release of greenhouse gases from the Teralba Quarry.</p> <ul style="list-style-type: none"> • 	<p><u>Air Quality Management Plan section 8.4</u> Key actions adopted and implemented at the Teralba Quarry to minimise release of GHG are:</p> <ul style="list-style-type: none"> • Minimising diesel consumption • Reducing truck idling time • Maintaining optimal tyre pressure • Optimising haul routes • Optimising electricity usage. 	<p>Compliant Ongoing</p>

5.5.5 Meteorological Monitoring

[Project Approval 10_0183 Schedule 3 condition 21]

[Environment Protection Licence 0536 condition M4]

An automated meteorological station installed on the Teralba Quarry site, is located 70m north of Rhondda Road adjacent to the access road to the Northern Extension Area. The meteorological station has been in a location that satisfies the criteria for the location of a weather station as described in *AS 2922:1987 Ambient Air - Guide for the Siting of Sampling Units* (NSW DECCW Method AM-1), and the *NSW DECCW Approved methods for the sampling and analysis of air pollutants in NSW* (DECC, 2005).



The Teralba Quarry meteorological station complies with the Project Approval 10_0183 Schedule 3 condition 21 and EPL 0536 condition M4, and the requirements in the *"Approved Methods for Sampling of Air Pollutants in NSW" Table 1*.

The meteorological station records:

- Wind speed (m/s) and wind direction(degrees);
- Temperature (at 2m and 10m above ground);
- Sigma-Theta
- rainfall (in mm)
- solar radiation;
- humidity (%);
- barometric pressure (mmHg); and
- fire danger index.

The meteorological station operates continuously and provides weather data and monthly with annual wind roses prepared between 2014 and 2017, except for a period during August and September 2015 when the meteorological station was out of service due to equipment failure.

5.5.6 Air Quality Criteria

[Project Approval 10_0183 Schedule 3 condition 17]

[Environment Protection Licence 0536 condition M2.2]

Project Approval 10_0183 Schedule 3 condition 17, specifies the air quality criteria to be achieved at any residence on privately-owned land:

Long-Term Impact Assessment Criteria for Particulate Matter

Pollutant	Averaging Period	Criterion
Total Suspended Particulates	Annual	90 µg/m ³
Particulate Matter <10µm (PM ₁₀)	Annual	30 µg/m ³

Short Term Impact Assessment Criteria for Particulate Matter

Pollutant	Averaging Period	Criterion
Particulate Matter <10µm (PM ₁₀)	24 hour	50 µg/m ³

Long-Term Impact Assessment Criteria for Deposited Dust

Pollutant	Averaging Period	Max increase in Deposited Dust Level	Max Total Deposited Dust Level
Deposited dust	Annual	2g/m ² /month	4g/m ² /month

5.5.7 Air Quality Monitoring Results

[Project Approval 10_0183 Schedule 3 condition 20(d)]

5.5.7.1 Dust Deposition Results

Dust monitoring equipment has been installed in accordance with AS/NZS 3580.10.1:2003 *Methods for Sampling and Analysis of Ambient Air, Determination of Particulates— Deposited Matter—Gravimetric Method* at the locations identified in EPL 0536 condition P1.1. The five (5) dust deposition gauges are located to the east of the Teralba Quarry on the western outskirts of Teralba village, given the prevailing and dominate winds are from the western quadrant and the location of the closest residential and sensitive receivers are located in this quadrant of the receiving air flow.

Table 4.4.5: Deposited Dust Monitoring Data – Monthly Ranges January 2014 to December 2016

Dust Deposition Results	Rhondda Road	Myrtle Street	Hillside Crescent	Rodgers Street	Margaret Street
January	0.3 - 1.2	0.7 - 1.2	0.7 - 1.2	0.5 - 2.8	0.3 - 1.2
February	1.4 - 2.6	0.7 - 1.8	1.2 - 2.0	1.6 - 2.4	0.5 - 1.5
March	0.5 - 2.0	0.6 - 1.3	0.6 - 1.7	0.2 - 0.8	0.5 - 0.9
April	0.3 - 1.9	0.4 - 1.4	0.7 - 1.7	0.3 - 2.0	0.5 - 1.9
May	0.4 - 0.8	0.7 - 2.0	0.7 - 4.5	0.4 - 6.7	0.5 - 1.3
June	0.6 - 1.0	0.8 - 2.6	0.7 - 5.3	0.4 - 1.0	0.5 - 1.0
July	0.2 - 1.0	0.8 - 3.3	0.6 - 1.1	0.3 - 1.0	1.0 - 1.6
August	0.5 - 0.9	0.8 - 2.5	1.2 - 8.1	0.4 - 0.8	0.7 - 1.3
September	0.8 - 1.0	0.9 - 2.6	1.2 - 2.0	0.4 - 1.0	0.9 - 1.5
October	0.4 - 0.8	1.0 - 1.2	0.2 - 2.0	0.8 - 1.6	0.7 - 0.8
November	0.4 - 1.3	0.8 - 1.4	0.8 - 1.9	0.8 - 4.2	0.7 - 1.7
December	0.9 - 1.2	0.9 - 1.8	0.7 - 1.8	0.3 - 2.8	1.1 - 1.3
Annual Average	0.9 - 1.0	0.9 - 1.7	1.4 - 1.8	0.7 - 2.0	1.0 - 1.1
Dust Deposition Criteria	Annual Maximum Increase in Deposited Dust Level - 2g/m ² /month Annual Maximum Total Deposited Dust Level – 4g/m ² /month				

The monthly dust deposition monitoring in Teralba has demonstrated that annual average dust deposition results comply with the dust deposition criteria specified in Project Approval 0183 Schedule 3 condition 17.

Monthly dust deposition results that exceeded the Maximum Total Deposited Dust Level of $4\text{g/m}^2/\text{month}$ were investigated to establish if sources of dust were arising from Teralba Quarry activities. No potential sources of dust generation that could be attributed to the Teralba Quarry operations were identified for the increased dust deposition levels in:

- May and November 2014 at the Rodgers Street Residence (EPA-8), exhibited monthly concentrations of $6.7\text{g/m}^2/\text{month}$ and $4.2\text{g/m}^2/\text{month}$ respectively;
- August 2015 at Hillside Crescent gauge EPA-1, exhibited a monthly concentration of $8.1\text{g/m}^2/\text{month}$; and
- May and June 2016 at the Hillside Crescent gauge EPA-1, exhibited monthly concentrations of 4.5 and $5.3\text{g/m}^2/\text{month}$ respectively.

Monthly dust deposition results at each of the monitoring sites where an increase was exhibited, subsequently exhibited deposition results of less than the Project Approval criteria.

5.5.7.2 *PM₁₀ Monitoring Results*

The installation of the high-volume air sampler (HVAS) 2014 in accordance with the EPL 0536 condition P1.1 at approved EPA Identification Point No. 3 (i.e. HVAS located outside the premises boundary, labelled as "HVAS" in Figure B titled "Surrounding Residences and Air Quality Monitoring Locations" attached to correspondence 20 Aug 2013) at Rodgers Street adjacent to the dust deposition gauge) provided PM₁₀.

Table 4.5.7.2: PM₁₀ Monitoring Data – July 2014 to December 2016

Month Jul 2014 to Dec 2016	PM ₁₀ 24hour Results	Exceedance of 24hour Criteria	Monthly Average Results	Annual Average Results	Exceedance of Annual Average
PM₁₀ Criteria		24hour criteria $-50\text{ }\mu\text{g/m}^3$		Annual Average $30\text{ }\mu\text{g/m}^3$	
Month					
January	14.4 - 18.4	Nil	14.4	14.4 – 18.4	Nil
February	12.8 – 13.6	Nil	12.8	13.6	Nil
March	16.2 – 19.6	Nil	19.6	15.6 – 16.2	Nil
April	7.4 – 22.0	Nil	7.4	13.6 – 22.0	Nil
May	9.8 – 15.6	Nil	9.8	12.8 – 15.6	Nil
June	6.2 – 11.4	Nil	11.4	6.2 -12.6	Nil
July	9.2 – 11.7	Nil	9.2	9.2 - 12.1	Nil
August	8.0 – 21.4	Nil	21.4	8.0 - 13.3	Nil
September	7.4 – 11.2	Nil	9.6	7.4 - 12.8	Nil
October	11.0 – 28.5	Nil	23.4	11.0 -13.9	Nil
November	17.6 – 55*	Nil	17.6	13.8 -14.2	Nil
December	18.5- 23.4	Nil	18.5	14.7	Nil

* 7 December 2016 one result of PM₁₀ $55\text{ }\mu\text{g/m}^3$ was attributable to bush fires in the region

The overall range of PM₁₀ results (i.e. minimum and maximum recordings) between July 2014 and December 2016 were:

- July to December 2014 – 2 to 46 $\mu\text{g}/\text{m}^3$
- January to December 2015 – 1 to 50 $\mu\text{g}/\text{m}^3$
- January to December 2016 – 2 to 55 $\mu\text{g}/\text{m}^3$

The 24hour and annual average PM_{10} levels determined from the HVAS at Rodgers Street demonstrated compliance with the criteria specified in Project Approval 10_0183 Schedule 3 condition 17, between July 2014 and December 2016, with the exception of one (1) PM_{10} result of 55 $\mu\text{g}/\text{m}^3$ on the week of 7 November 2016 (a result of bushfires near Newcastle affecting the air quality of the region).

5.5.8 Conclusion

The Air Quality Management Plan and dust control measures implemented at the Teralba Quarry are adequate for the Teralba Quarry operations and activities. The dust deposition monitoring indicated that the Teralba Quarry activities was compliant with the annual average dust deposition criteria specified in Project Approval 10_0183 Schedule 3 condition 17. The PM_{10} monitoring demonstrated compliance with the 24hour criteria of $<50 \mu\text{g}/\text{m}^3$ and the annual average criteria of $<30 \mu\text{g}/\text{m}^3$.

Dust issues occurring from high wind events (particularly from the western quadrant) have been managed in accordance with the Air Quality Management Plan, with operations/activities that have the potential to generate dust curtailed in higher exposed areas where there is potential for dispersion of dust to the residential areas of Teralba village. No complaints were received between January 2014 and December 2016 related to dust / air quality.

5.6 Water Management

[Project Approval 10_0183 Schedule 3 conditions 22 to 26]

5.6.1 Surface Water Hydrology - Local Setting

Teralba Quarry is located within the Lake Macquarie catchment area, with three localised catchments covering parts of the Teralba Quarry project site.

There are seven sub-catchment areas within the Teralba Quarry project site:

- Sub-catchment area A is the largest catchment within the Project Site and encompasses the eastern side of the existing Southern Extraction Area to the eastern boundary of the Project Site. Sub-catchment A also contains a section of the proposed Southern Extension. Features of the sub-catchment area include the Metromix office, weighbridge, stockpiles and processing plant, asphalt plant, haul roads, undisturbed bushland, sediment dams and workshop. A series of sediment dams (B to F and H) are present in the south of the sub-catchment. Runoff from this sub-catchment is collected and drained to Dam B through a series of formalised drainage paths. At present, excess flow from Dam B discharges via a pipe to the Mine Adit Dam. Excess flow from the Mine Adit Dam discharges off site to an unnamed creek, which in turn flows into a concrete drain, referred to as Murph's Drain, draining directly to Lake Macquarie.
- Sub-catchment areas B and C cover the current main conglomerate extraction area of the existing Southern Extraction Area, the pugmill in the southeast, and a small area of undisturbed bushland to the south. Surface runoff from Sub-catchment B flows to numerous low points where short-term ponding and infiltration occurs;
- Sub-catchment D is located south of the existing Southern Extraction Area in largely undisturbed bushland draining into Sub-catchment A via an ephemeral creek.
- Sub-catchments E and F are located north of Rhondda Road and contain the majority of the existing Mid Pit Extraction Area and Northern Extension. These areas are largely undisturbed bushland draining off site to the west (to Cockle Creek) or directly to Lake Macquarie via ephemeral creeks.

- Sub-catchment G is located in the north-eastern section of the Project Site and contains the eastern side of the existing Mid Pit Extraction Area. The catchment is predominantly undisturbed bushland but also contains a section of cleared power transmission line easement and an unsealed access track along the western ridge.

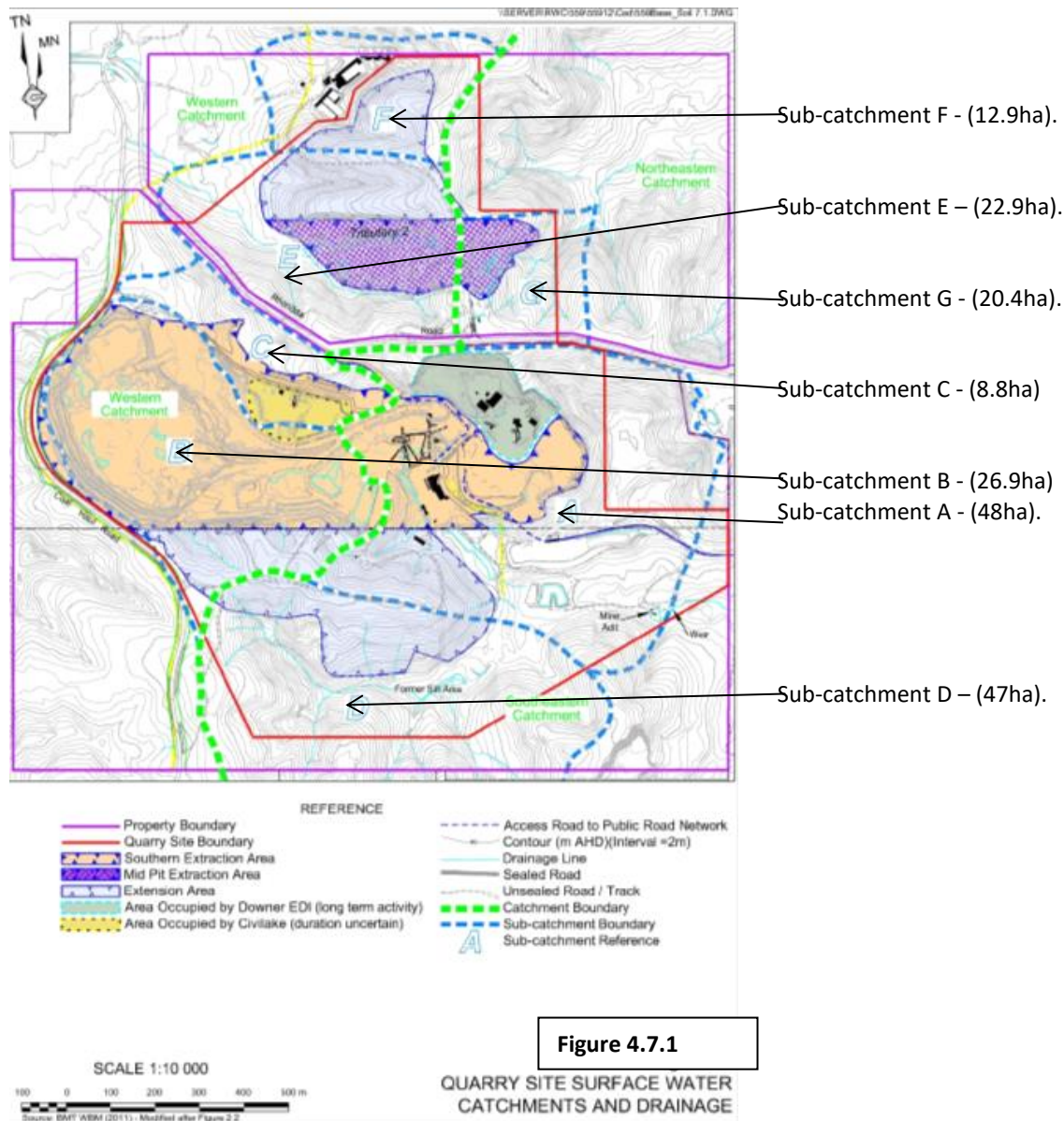


Figure 5.6.1: Teralba Quarry Surface Water Catchments

5.6.2 Environmental Assessment – Water Management

[Environmental Assessment - Teralba Quarry Extensions November 2011]

[Environmental Assessment for the Teralba Quarry Extensions, Specialist Consultant Studies Compendium Volume 1 Part 2 and 3 - Surface and Groundwater Assessment, November 2011]

Site clearing and general quarry operations have the potential to impact surface water quantity and quality mainly by altering runoff volumes and increasing erosion and sedimentation.

Potential surface water impacts include:

- erosion and sedimentation of the downstream environment resulting from site clearing activities;
- increased ground infiltration on site resulting from vegetation clearing and the collection and storage of runoff; and
- change in surface runoff volumes discharging to the sediment dams.

The potential surface water impacts can be mitigated by:

- updating the Site Water Management Plan to take into account the Northern and Southern Extensions;
- ensuring any off-site discharge is monitored and reported in accordance with the EPL;
- constructing and maintaining temporary diversion drains/bunds around the perimeters of the extraction areas;
- conducting site clearing in accordance with the Blue Book (Landcom, 2004) guidelines for erosion and sediment control;
- providing sufficient storage in accordance with the Blue Book (Landcom, 2004) guidelines for sediment retention dams during all stages of works to prevent discharge off site of sediment-laden water.

Operations at Teralba Quarry require water for processing the raw feed recovered from the extraction areas. The majority of this water is sourced from the Mine Adit Dam.

The impact on groundwater quality has been assessed by reviewing monitoring records from discharge monitoring at the Mine Adit Dam (which commenced in 1989) and reporting in accordance with EPL 0536 condition U1 to U3. It was determined that the existing quarrying operations had not had an observable impact on groundwater quality and the proposed quarry extensions were also not expected to significantly impact on groundwater quality through general operations.

The groundwater aquifer flow regime may be locally affected by the quarry activities, as the aquifer transmissivities are reduced as the mine voids underlying the quarried areas are incrementally filled with collapsed conglomerate. Monitoring of the groundwater flows and quality will assist in determining impacts as the quarry extensions develop.

5.6.3 Statements of Commitment – Water Management

[Environmental Assessment for the Teralba Quarry Extensions, section 6, November 2011]

[Project Approval 10_0183 Appendix 3]

Statements of Commitment in relation to water management expressed in the Environmental Assessment for the Teralba Quarry Extensions (November 2011) and Project Approval 10_0183 Appendix 3 for the Teralba Quarry project, include:

- Groundwater Statements of Commitment 6.1 to 6.9;
- Surface Water Statements of Commitment 7.1 to 7.14.

The status of the Statement of Commitment related to water management are included below under each aspect (i.e. Site Water Balance section 4.8, Surface Water Management section 4.9, Erosion and Sediment Control section 4.10, and Groundwater Management section 4.11).

5.6.4 Water Management Plan

[Project Approval 10_0183 Schedule 3 condition 26]

The Water Management Plan was prepared in August 2013 and submitted to DP&I. Comments on the Water Management Plan were provided to Metromix by DP&I on 16 January 2014 and the Water Management Plan was revised and resubmitted to the DP&I for approval on 27 June 2014. Revision 3 of the Water Management Plan was submitted to DP&E on 30 September 2016 and approved on 20 December 2016.

The Water Management Plan includes site water balance, surface water management, erosion and sediment control and groundwater management measures that have been implemented for the Teralba Quarry operations and activities (refer to sections 4.8, 4.9, 4.10 and 4.11 below).

5.6.5 Conclusion

The Water Management Plan (Revision 3) was submitted to DP&E and approved on 20 December 2016. Implementation of the management measures and monitoring in the Water Management Plan for surface water,

erosion and sediment control and groundwater have occurred for the Teralba Quarry operation and activities in accordance with the Water Management Plan. Water management on the Teralba Quarry site was observed during this independent environmental audit to be compliant with the requirements of the EPL and Project Approval conditions.

5.7 Site Water Balance

[Project Approval 10_0183 Schedule 3 condition 26(a)]

5.7.1 Environmental Assessment

[Environmental Assessment for the Teralba Quarry Extensions, November 2011]

[Environmental Assessment for the Teralba Quarry Extensions, Specialist Consultant Studies Compendium Volume 1 Part 3 Surface Water Assessment, November 2011]

The Teralba Quarry Site Water Balance was assessed as part of the Environmental Assessment Volume 1 Part 3 - Surface Water Assessment (November 2011) section 3.8:

5.7.1.1 Water Sources

A disused Mine Adit located to the southeast of the existing Southern Extraction Area is the key discharge point from the Great Northern Coal Seam (GNCS) mine workings when Rhondda Colliery was operational and has remained an outlet for “groundwater” that is flowing through the former mine workings. This Mine Adit partially intercepts groundwater in the GNCS which flows to a holding dam (the “Mine Adit Dam A”). The groundwater flow is recharged by rainfall that flows through the permeable conglomerate layer above the GNCS across the Teralba Quarry site and the surrounding properties. This dam occasionally overflows into sediment Dam B and this overflow water discharges from EPA monitoring point 5 (this overflow from the Mine Adit does not originate from the Teralba Quarry operations and is not able to be controlled by Metromix). Overflow from the Mine Adit Dam A flows over a weir through a triple pipe discharge, with permanent data logger monitoring of volume/flow), before discharging to a small channel (known as “Murph’s Drain”), that flows through Teralba Village eventually discharging to Lake Macquarie near the entry of Cockle Creek.

A detailed evaluation in the Environmental Assessment of monthly flow data from the Mine Adit Dam, established that the total water usage by the Teralba Quarry operations in 2003 and 2008 accounted for 53% and 34% of the total flow into the Mine Adit Dam respectively with the quantity of water used by the Teralba Quarry operations generally consistent during this period and typically approximately 1,300MLpa.

Based on this data from 2003 and 2008, the Surface Water Assessment (November 2011), concluded that Teralba Quarry operations would not have a significant impact on the quality of the underlying groundwater.

Surface water runoff within the Teralba Quarry site may occur from rainfall events and overflow from the processing plant. A significant proportion of rainfall and surface water runoff across the Teralba Quarry site infiltrates due to the highly permeable ground surface (as a result of incipient permeability and subsidence cracks attributable to coal mining beneath the Teralba Quarry and the conglomerate weathering profile).

Surface runoff from the Southern Extraction Area and surrounding catchment either infiltrates through the floor of the extraction area or flows eastwards via a series of formalised drainage paths including open table drains, pipes, culverts, weirs and sediment dams.

5.7.1.2 Site Water Use and Availability

The quarry requires water for the wet production process (crushing/washing/screening raw materials). Small amounts of water are also required for dust suppression and wheel washing purposes. The estimated water usage for Teralba Quarry is approximately 1,300ML per year of which 70% is recycled water through the on-site silt cells.

Potable water for the Teralba Quarry site is directly sourced from the local water mains for amenities, drinking water and washing of equipment and road trucks on site.

Non-potable water for the quarry operations is sourced from the Mine Adit Dam, with water pumped to Dam G and then to the processing plant. Water not lost to quarry products or as evaporation either flows via surface drainage into the series of sediment dams or is collected and stored in a holding tank in the plant area.

Non-potable water is extracted from the Mine Adit Dam A, under Bore Licence No. 20BL173206 issued by the NSW Office of Water on 12 October 2012 (current until 11 October 2017). The Bore Licence allows for extraction of groundwater for Dewatering and Industrial – Sand and Gravel use to a maximum extraction rate of 1407 ML per year. Metromix will continue to source its non-potable water requirements from the Mine Adit Dam A in addition to the settled water from the silt cells, which is also available for the various quarry water use activities (primarily for washing the extracted raw feed material from the quarry, dust control and wheel washes).

Water is recirculated throughout the Teralba Quarry operation of the processing plant, with waste water or slurry pumped to the silt cells for settling and evaporation when the water quality is unsuitable for reuse through the processing plant because of high suspended solid content.

A further source of water that may be used for the Teralba Quarry process plant can be accessed via the right to use stormwater collected in site storage dams (harvestable rights), governed under *Water Management Act 2000* clause 53. The combined maximum harvestable rights dam capacity (MHRDC) for the Teralba Quarry Site has been calculated at 24.37ML.

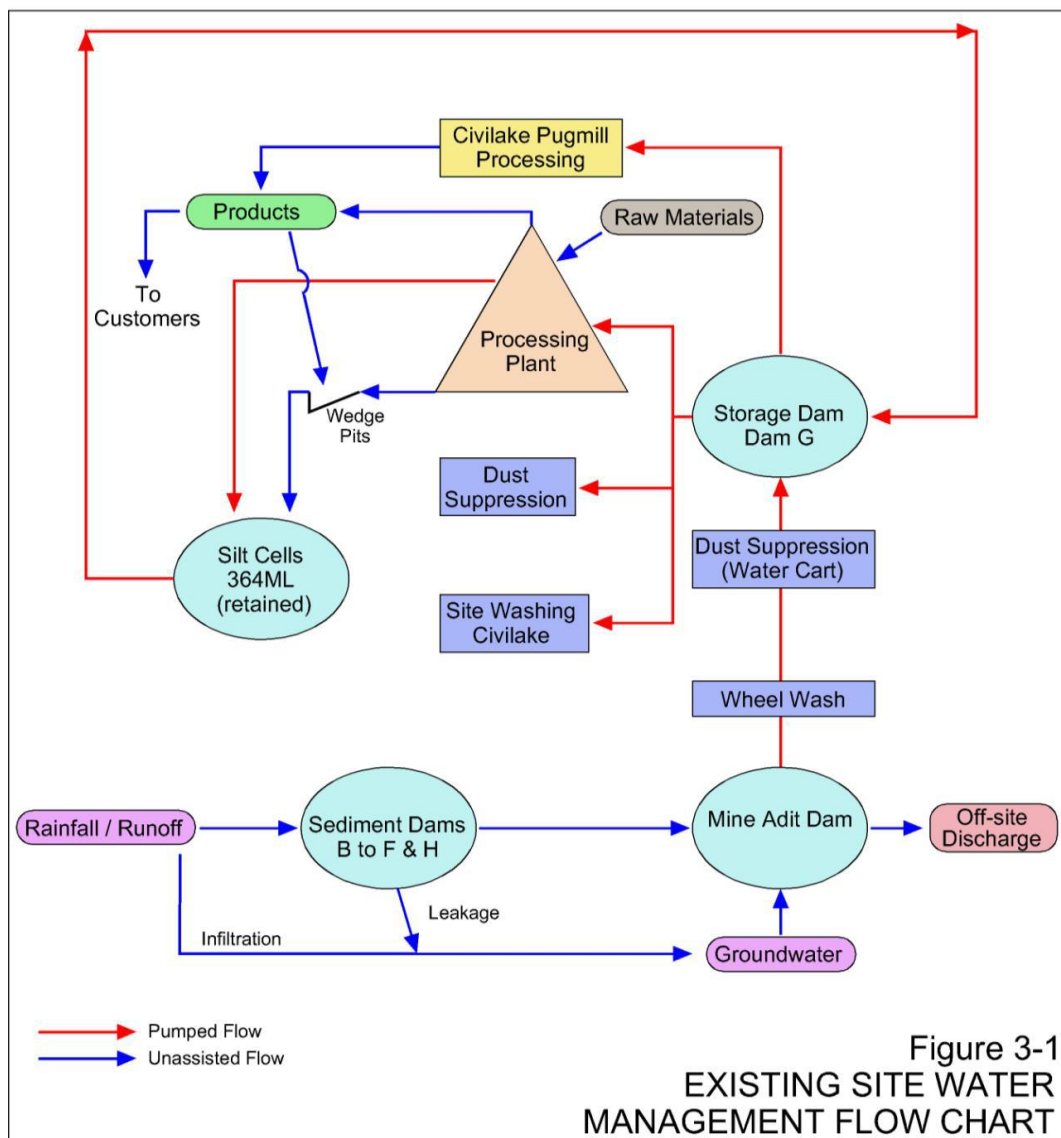


Figure 5.7.2: Site Water Balance Flow Chart (from Water Management Plan Figure 3.1)

5.7.2 Site Water Balance

[Project Approval Schedule 3 condition 26(a)]

The Water Management Plan section 7.3.1 addresses water supply for the Teralba Quarry activities, with and Site Water Balance details in section 7.4. The Water Management Plan Revision 3, including the Site Water Balance, was approved by DP&E on 20 December 2016.

The Site Water Balance flow chart Water Management Plan (Figure 3.1) is shown in Figure 5.8.2.

Flow monitoring (recorded from the installed water flow meters on the water supply line from the Mine Adit Dam A, occurs continuously and water flow and water quality data is collected and reported as part of the EPL Annual Return and Project Approval 10_0183 Schedule 5 condition 4 -Annual Review

5.8 Surface Water

[Project Approval 10_0183 Schedule 3 condition 26(b)]

5.8.1 Historical Surface Water Quality

Water discharge from the Teralba Quarry Mine Adit Dam A (largely groundwater sourced from mined voids of the Rhondda Colliery), has been monitored since September 1998 on a monthly basis. Historically the discharge recorded immediately downstream of the Mine Adit Dam A, averaged 4.5ML/day over the period July 2000 to December 2008.

Discharge water quality from Dam A, between July 2000 to December 2008 exhibited:

- pH values of the water in Mine Adit Dam A generally within the range of 6.5-8.5.
- Suspended solids concentrations ranging from 1- 150mg/L (total suspended solids concentration only exceeded 50mg/L on 11 occasions).
- Electrical conductivity values ranged from 2,300µS/cm to 12,300µS/cm with a declining trend evident after 2006 (when salt water and waste water was no longer discharged into a coal seam in Rhondda Colliery).

5.8.2 Environmental Assessment -Surface Water

[Environmental Assessment for the Teralba Quarry Extensions, section 5.3, November 2011]

[Environmental Assessment for the Teralba Quarry Extensions, Specialist Consultant Studies Compendium Volume 1 Part 3 Surface Water Assessment, November 2011]

The Environmental Assessment assumed that surface water would continue to be managed to ensure all sediment-laden water or potentially contaminated water (exceeding relevant criteria) would be retained on site, thereby ensuring a minimum level of impact. Additional dams would be constructed to provide the level of control required. The surface water assessment determined there would be no adverse impacts on the downstream environment, given the adoption of the proposed design and operational safeguards.

A Water Management Plan would be prepared and implemented for the Teralba Quarry project site that would include a water monitoring program to enable review of the effectiveness of water management measures.

The assessment of impacts on surface water concluded that the extraction of conglomerate would cause local changes in the catchments within the Teralba Quarry project site, however the impacts of such changes would be negligible given the existing and ongoing dominance of infiltration of rainfall and runoff rather than flow of surface runoff from the site.


It was noted that the proposed water management involving the direct recycling of process water on the site would result in greater flows from the Mine Adit Dam to the creek to the east and ultimately to Lake Macquarie.

5.8.3 Statements of Commitment – Surface Water

[Environmental Assessment for the Teralba Quarry Extensions, section 6, November 2011]
[Project Approval 10_0183 Appendix 3]

Statements of Commitment in relation to surface water management expressed in the Environmental Assessment for the Teralba Quarry Extensions, section 6 and Project Approval 10_0183 Appendix 3 for the Teralba Quarry project were:

SoC No.	Statements of Commitment – Surface Water Project Approval 10_0183	Comment on Implementation	Compliance
7	Surface Water		
7.1/7.5	Conduct site clearing activities in accordance with the Blue Book (Landcom, 2004) guidelines for erosion and sediment control.	Vegetation clearance on the Teralba Quarry site has been limited to the areas required for extraction to minimise erosion and sediment loss from the site.	Compliant Ongoing
7.2/7.6	Establish a regular monitoring program to review the effectiveness of all erosion and sediment control mitigation measures.	The Erosion and Sediment Control Plan prepared as part of the Water Management Plan Appendix 1 section 3.3.4, includes a regular monitoring program for the erosion and sediment structures.	Compliant Ongoing
7.3/7.7	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.	The Water Management Plan prepared in consultation with the Lake Macquarie City Council and the NSW Office of Water (NOW) was submitted to DP&I on 22 August 2013. The updated Water Management Plan (Rev 3) was approved by DP&E on 20 December 2016.	Compliant
7.4/7.8	Ensuring any off-site discharge is monitored and reported in accordance with Environment Protection Licence 536.	Monitoring of the discharge from the EPA approved monitoring points has occurred and reported in accordance with EPL condition P1.2, L2.4 and M2.3.	Compliant Ongoing
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.	<u>See Project Approval Schedule 3 condition 26(b)</u> Erosion and sediment control structures constructed on the Teralba Quarry have adequate capacity to retain and settle sediment containing runoff from the disturbed areas of the site. The calculations for the sediment dam capacities were based on “Managing Urban Stormwater – Soils and Construction Volume 1 (Landcom 2004) and Volume 2E, Mines and Quarries (EPA 2008). The sediment dams inspected during the audit site visit indicated the design capacity available for collection and settlement of surface runoff appeared adequate.	Compliant

7.10	Inspect all sediment dams and maintain as necessary (keep records).	Sediment dam inspections are conducted weekly and within 24hr after rainfall events >10mm/24hr and records of status retained.	Compliant Ongoing
7.11	Remove accumulated sediment from sediment dams when storage capacity reduced by 25% - document activity in maintenance records.	Sediment dam inspections conducted weekly and sediment removed as required to retain 70% dam capacity is available.	Compliant Ongoing
7.12	Securely store all hydrocarbon products within designated and bunded areas.	Diesel storage for use on the Teralba Quarry site is adjacent to the workshop area in two (2) bunded aboveground tanks. Containers of oil/lubricants are stored in a bunded shed adjacent to the maintenance workshop.	Compliant Ongoing
7.13	Refuel all earthmoving equipment within designated areas (with spill control).	Spill management is described in a Safe Working Method Statement.	Compliant
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.	<p>A drain and discharge point has been established from Dam B to the nearby watercourse to divert surface water flows away from the Mine Adit Dam A.</p> 	Compliant

5.8.4 Surface Water Management Plan

[Project Approval 10_0183 Schedule 3 condition 26(b)]

A Surface Water Management Plan is included in the overall Water Management Plan (Revision 3), section 7.1, was approved by DP&E on 20 December 2016.

Existing Surface Water Quality is addressed in Section 7.1.5, clean water diversion and design objectives and performance criteria for site water management are addressed in section 8. Section 9.2 addresses surface water assessment criteria; Section 9.3 addresses monitoring locations and frequency; Section 10 provides a review of the dirty water management and Section 11 corrective and preventative actions to respond to any exceedance of performance criteria.

Control measures and commitments included for surface water in Water Management Plan, to satisfy Project Approval 10_0183 Schedule 3 condition 26(b) are:

Project Approval Schedule 3 condition 26(b) Requirements – Surface Water	Implementation Status	Compliance Status
Surface Water Management Plan, that includes:	Surface Water Management prepared as section 7 of the Water Management Plan Revision 3:	Compliant

Project Approval Schedule 3 condition 26(b) Requirements – Surface Water	Implementation Status	Compliance Status
<ul style="list-style-type: none"> detailed baseline data on surface water flows and quality in the watercourses that could be affected by the project; 	<ul style="list-style-type: none"> Section 7.1.5 addresses Existing Surface Water Quality 	Compliant
<ul style="list-style-type: none"> a detailed description of the surface water management system on site, including the: <ul style="list-style-type: none"> o clean water diversion systems; o erosion and sediment controls; and o water storages; 	<ul style="list-style-type: none"> Section 7.1 addresses Site Water Management and section 8 addresses clean water diversion and erosion and sediment control. 	Compliant
<ul style="list-style-type: none"> design objectives and performance criteria for proposed: <ul style="list-style-type: none"> o erosion and sediment control structures; o water storages; and o control of water pollution from rehabilitated areas of the site; 	Section 8 addresses design objectives and performance criteria for erosion and sediment control structures and water storages.	Compliant
<ul style="list-style-type: none"> performance criteria, including trigger levels for investigating any potentially adverse impacts, for surface water quality of local watercourses and Lake Macquarie; 	<ul style="list-style-type: none"> Section 9.2 addresses assessment / performance criteria, including trigger levels performance criteria, including trigger levels. 	Compliant
<ul style="list-style-type: none"> a program to monitor: <ul style="list-style-type: none"> o the effectiveness of the water management system; o surface water flows and quality in local watercourses and Lake Macquarie; and o ecosystem health of local watercourses and Lake Macquarie; 	<ul style="list-style-type: none"> Section 9.3 addresses monitoring locations and frequency. 	Compliant
<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Section 11 outlines corrective and preventative actions to respond to any exceedances of the performance criteria. 	Compliant
<ul style="list-style-type: none"> a detailed review the dirty water management system to: <ul style="list-style-type: none"> o determine whether the capacity, integrity, retention time and management of the system are sufficient to ensure that water discharged from the site meets performance criteria and propose any upgrades necessary to meet these criteria; o assess appropriate options to improve storage and retention times in accordance with The Blue Book - <i>Managing Urban Stormwater: Soils and Construction</i> (Landcom 2004); 	<ul style="list-style-type: none"> Section 7.3 provides a review of the dirty water management system, and section 8 outlines options to improve storage and retention times in accordance with The Blue Book. 	Compliant
Site Surface Water Management section 7.3		
Discharge water quality from the sediment dam network on the southern side of Rhondda Road is controlled through Dam D (capacity approximately 35ML). This dam incorporates a perforated riser that enables water to be drawn from the upper 5m of the dam storage zone, following manual opening of a valve on the outlet pipe from the dam. The trigger level for this dam is approximately 20m AHD (i.e. 2m below the spillway level) above which the outlet valve is opened manually provided the water quality of TSS is less than 50mg/L and no visible oil and grease is present.	Dams D exhibits considerable leakage (to underground mine workings, subsidence cracks, etc.) such that overflows via the spillway have not occurred between February 2014 and February 2017.	Compliant Ongoing

Project Approval Schedule 3 condition 26(b) Requirements – Surface Water	Implementation Status	Compliance Status
Runoff from the eastern side of the Mid Pit Extraction Area flows into Dam K and has a trigger level set at 70m AHD or 1.5m below the spillway level of 71.5m AHD.	Dams K exhibits considerable leakage (to underground workings, subsidence cracks, etc.) such that overflows via the spillway have not occurred to date of this audit.	Compliant Ongoing
Runoff from the western side of the Mid Pit Extraction Area flows into Dam J or the floor of the extraction area. Dam J and the adjacent Pit Sump have been excavated to create a capacity of approximately 36ML which will result in no runoff from the western side of the Mid Pit Extraction Area overflowing from the area	Dams J capacity is adequate to ensure that no overflow occurs from the Mid-Pit Extraction Area.	Compliant Ongoing

5.8.5 Surface Water Assessment Criteria

[Project Approval 10_0183 Schedule 3 condition 26(b)]

[EPL 0536 condition P1.3 L2.4 and M2.4]

The surface water monitoring program for Teralba Quarry was prepared to satisfy Project Approval 10_0183 Schedule 3 condition 26(b) and EPL 0536 conditions P1.3, L2.4 and M2.4. Surface water monitoring has occurred in accordance with the EPL conditions P1.3, L2.4 and M2.3 at EPA approved monitoring points 4, 5, 6 and 7.

Table 5.8.5: Teralba Quarry Surface Water Monitoring Criteria (EPL condition L2.4 and M2.4)

Pollutant	100%ile Concentration Limit	Location	Sampling / Frequency
pH	6.5 – 8.5	<u>EPA monitoring Point 4:</u> Overflow point from the Mine Adit Dam labelled "3" in Figure C "Water monitoring" dated 20 Aug 2013	Grab Sample. pH and TSS once a month (min. of 4 weeks) of water flowing off-site (EPA monitoring Points 4, 5). Flow meter/ continuous logger for flow rate / volume (EPA monitoring Points 4, 5).
Total Suspended Solids (TSS)	50 mg/l	<u>EPA monitoring Point 5:</u> Discharge at the end of pipe from Dam B before entering the unnamed creek flowing to Lake Macquarie, labelled "4" in Figure C "Water Monitoring" dated 20 Aug 2013.	
Flow rate	Kilolitres/day		
pH	6.5 – 8.5	<u>EPA monitoring Point 6:</u> North-western boundary of premises into unnamed north-western drainage line labelled "5" in Figure C "Water Monitoring" dated 20 August 2013).	Grab Sample. pH, TSS and EC Special Frequency 1 the licensee must monitor within 8 hours of commencing discharge and weekly thereafter during discharge of any water off-site (EPA monitoring Points 6 and 7).
Total Suspended Solids (TSS)	50 mg/l	<u>EPA monitoring Point 7:</u> North-eastern boundary of premises into north-eastern drainage line labelled "6" in Figure C "Water Monitoring" dated 20 August 2013.	
Electrical Conductivity (EC)	µS/cm		

A Pollution Study and Reduction Program required under EPL 0536 condition 8-U1.1 to U1.3 was conducted between September 2013 and December 2015, to assess pollutants in discharges from EPL 0536 monitoring point 4 (Mine Adit Dam A) and EPL monitoring point 5 (Dam B) to determine the levels of suspended and dissolved metals.

The trigger values utilised in the water quality data assessment were obtained from ANZECC identified environmental values for aquatic ecosystem, visual amenity and secondary contact recreation for the Lake Macquarie and Tuggerah Lakes catchments affected by urban development (this water type was determined by DECCW (EPA) for a "slightly/moderately disturbed" system.

The water quality results for EPA Monitoring Point 4 (Mine Adit Dam A) and Dam B collected over 38 months of sampling with analysis for dissolved pollutants, indicated that dissolved metals in the water samples were generally less than and consistent with ANZECC guideline trigger values.

An exceedance for dissolved chromium and silver at EPL 4 occurred on one occasion, but these results were considered outliers and not representative, given that the majority of samples were below the limit of recording for these pollutants on all other sampling dates. The results of the water quality assessment presented in the Pollution Study and Reduction Program reports prepared to satisfy EPL 0536 condition 8-U1.1 to U1.3¹ demonstrated that the Teralba Quarry operations had not adversely impacted water quality in the surrounding or downstream areas from the quarry.

5.8.6 Surface Water Monitoring

[Project Approval 10_0183 Schedule 3 condition 26(b)]

[EPL 0536 conditions P1.3, L2.4 and M2.4]

Surface water monitoring conducted in accordance with the Water Management Plan section 9 and EPL 0536 condition P1.3 between February 2014 to February 2017 indicated:

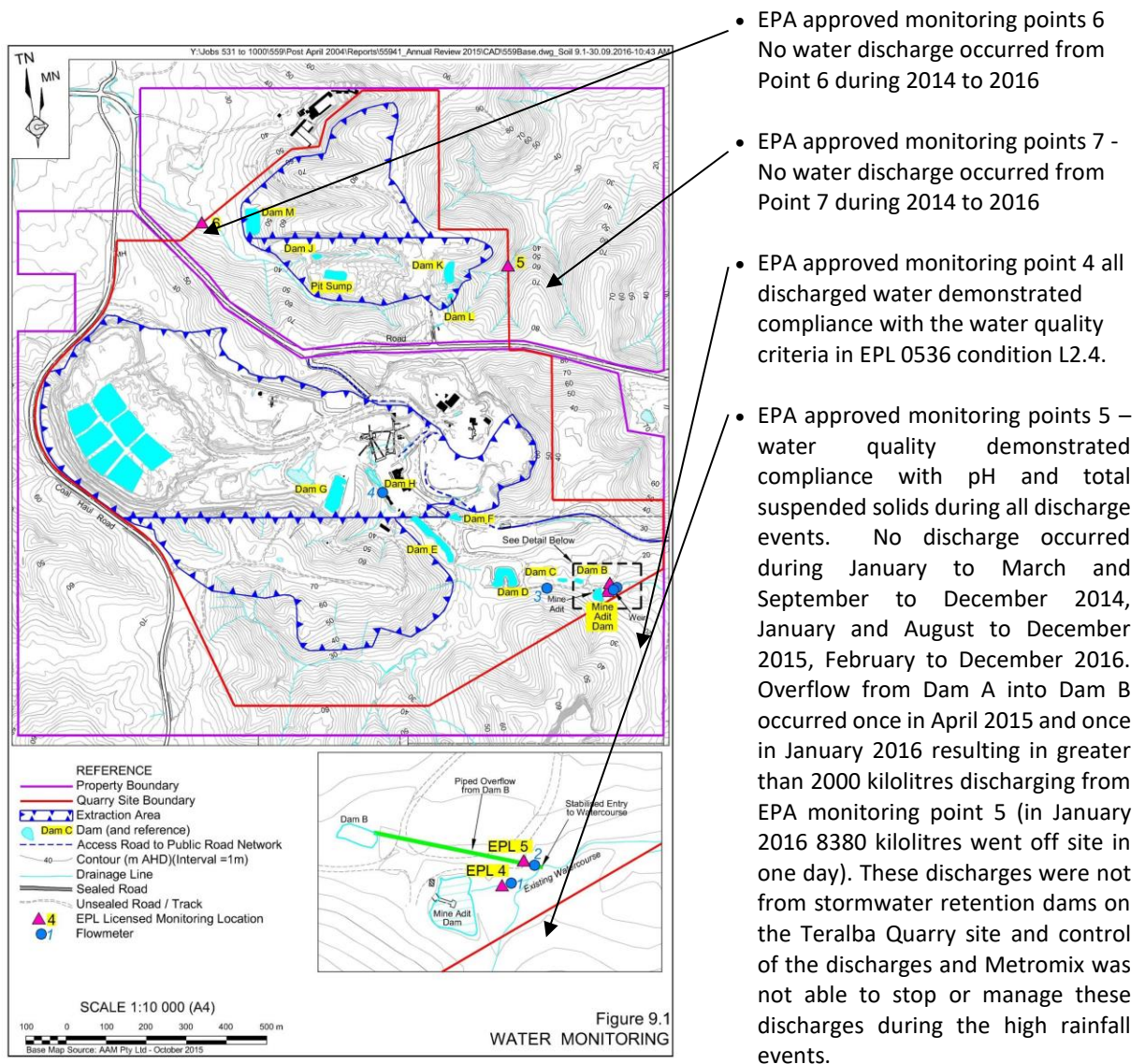


Figure 5.8.6: Surface Water Monitoring Locations

¹ Initial Report for Condition U1.1 and U1.2 for Environment Protection Licence 536, Aug 2014

Second Report for Conditions U1.1, U1.2 and U1.3 for Environment Protection Licence 536, April 2015

Final Assessment Report for the Pollution Reduction Program, Environment Protection Licence 536, Sep 2016

5.8.7 Conclusion

A Surface Water Management Plan (included in the overall Water Management Plan Revision 3 section 7.1) was approved by DP&E on 20 December 2016. Surface water quality and control measures implemented in accordance with the Water Management Plan, provide a satisfactory site water management system for all surface water runoff and collection at the Teralba Quarry, to ensure protection of the surrounding natural waterways.

Water monitoring results between February 2014 to February 2017 indicated compliance with water quality criteria expressed in EPL 0536 L2.4 for all discharge events from Mine Adit Dam A and Overflow Dam B. No discharge to the environment occurred between 2014 and 2016 from EPA monitoring Point 6 on the north-eastern boundary of Teralba Quarry site (west of Dam M) or EPA monitoring Point 7 on the north-eastern boundary of premises (east of Dam K) during the 2014 to 2017 period.

5.9 Erosion and Sediment Control

[Project Approval 10_0183 Schedule 3 condition 26(b)]

5.9.1 Environmental Assessment

[Environmental Assessment for the Teralba Quarry Extensions, section 5, November 2011]

[Environmental Assessment for the Teralba Quarry Extensions, Specialist Consultant Studies Compendium Volume 1 Part 3 Surface Water Assessment, November 2011]

To mitigate off-site surface water quality impacts, the design of quarrying operation procedures is to minimise the potential for erosion, and measures to control and treat sediment-laden waters are to be implemented generally in accordance with *Managing Urban Stormwater Volume 1* (Landcom, 2004) and Volume 2E *Mines and Quarries* (DECC, 2008).

Site clearing and general quarry operations have the potential to impact surface water quantity and quality by altering flow regimes and increasing erosion and sediment loss. The proposed erosion and sediment control measures on site are sediment dams that would be regularly inspected and cleaned.

As vegetated areas on the Teralba Quarry are cleared, vegetation would be pushed to the down-slope side of the cleared area and temporarily stockpiled acting as a sediment barrier. Surface of soil stockpiles are to be left as coarsely structured as possible to promote surface water infiltration and minimise erosion until vegetation is established.

Sediment-laden water on site, generated from surface water runoff flow within the disturbed areas south of Rhondda Road, is generated from the Southern Extraction Area and Southern Extension. This surface runoff will be generally contained within the quarry area and either infiltrate into the underlying conglomerate or captured and contained in a series of sediment ponds (Dams B, C, E, F, and H). Dam B is the final treatment (settlement pond) before discharge of any water occurs from the Teralba Quarry site operations to the downstream environment. (Refer to Figure 5.9.4: Teralba Quarry Surface Water Management Dams)

Water generated in the processing area is largely collected in a temporary storage pit (wedge pit), and then transferred to the silt cells in the western side of the Southern Extraction Area. Following settlement, water is recovered from the silt cells (and transferred to Dam G for re-use in the processing plant).

5.9.2 Statements of Commitment – Erosion and Sediment Control

[Environmental Assessment for the Teralba Quarry Extensions, section 6, November 2011]

[Project Approval 10_0183 Appendix 3]

Statements of Commitment in relation to erosion and sediment control expressed in the Environmental Assessment for the Teralba Quarry Extensions, section 6, November 2011, and Project Approval 10_0183 Appendix 3 are:

SoC No.	Statement of Commitment Project Approval 10_0183		Comment on Implementation		Compliance															
7	Erosion and Sediment Control																			
7.1	Conduct site clearing activities in accordance with the Blue Book (Landcom, 2004) guidelines for erosion and sediment control.		All site clearing activities at the Teralba Quarry are conducted in accordance with the “Managing Urban Stormwater Volume 1 (Landcom, 2004) and Volume 2E “Mines and Quarries” (DECC, 2008) guidelines and the Water Management Plan Revision 3 Appendix 1 - Erosion and Sediment Control Plan.		Compliant															
7.2	Establish a regular monitoring program to review the effectiveness of all erosion and sediment control mitigation measures.		The erosion and sediment control measures are inspected weekly and following significant rainfall events to ensure their effectiveness.		Compliant Ongoing															
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.		The Water Management Plan was Revised and approved on 20 December 2016, including the Erosion and Sediment Control Plan (prepared by Environ).		Compliant															
7.4	Ensuring any off-site discharge is monitored and reported in accordance with Environment Protection Licence 0536.		Surface water discharge from the Teralba Quarry site is monitored in accordance with EPL 0536 conditions P1.3, L2.4 and M2.3.		Compliant Ongoing															
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.		Sediment dam sizing has been based on the conservative classification of the site soils as “D/F”, and rainfall based on “Managing Urban Stormwater, Soils and Construction, Volume 2E, Mines and Quarries”. The design of the dams is based on a 90th percentile ARI for areas planned to be disturbed greater than 3 years:		Compliant															
		<table><tr><th>Sub-catchment</th><th>Disturbed Catchment Area</th><th>Calc. Sediment Dam Volume</th><th>Current Capacity of Dams</th></tr><tr><td>Southern Extraction Pit</td><td>43.27 ha</td><td>313.5 ML</td><td>Dams B, C, D, E, F and H - 49.6ML</td></tr><tr><td>Northern Extension</td><td>9.10 ha</td><td>5ML</td><td>Northern Area - 14.6ML</td></tr><tr><td>Mid-Pit Extraction Area</td><td>7.42 ha</td><td>4 ML</td><td>Dams J and K - 38.6ML</td></tr></table>	Sub-catchment	Disturbed Catchment Area	Calc. Sediment Dam Volume	Current Capacity of Dams	Southern Extraction Pit	43.27 ha	313.5 ML	Dams B, C, D, E, F and H - 49.6ML	Northern Extension	9.10 ha	5ML	Northern Area - 14.6ML	Mid-Pit Extraction Area	7.42 ha	4 ML	Dams J and K - 38.6ML		Compliant
Sub-catchment	Disturbed Catchment Area	Calc. Sediment Dam Volume	Current Capacity of Dams																	
Southern Extraction Pit	43.27 ha	313.5 ML	Dams B, C, D, E, F and H - 49.6ML																	
Northern Extension	9.10 ha	5ML	Northern Area - 14.6ML																	
Mid-Pit Extraction Area	7.42 ha	4 ML	Dams J and K - 38.6ML																	
7.10	Inspect all sediment dams and maintain as necessary (keep records).		The erosion and sediment control measures are inspected weekly and following significant rainfall events to ensure their effectiveness.		Compliant Ongoing															
7.11	Remove accumulated sediment from sediment dams when storage capacity reduced by 25% - document activity in maintenance records.		A marker is installed in the sediment dams to indicate when the design sediment storage capacity is reached. The dam is then cleaned out with sediment removed and transferred to silt cells.		Compliant Ongoing															

5.9.3 Erosion and Sediment Control Plan

[Project Approval 10_0183 Schedule 3 condition 26(b)]


The Erosion and Sediment Control Plan was prepared in August 2013 and submitted to DP&I. Comments were received from DP&I on 16 January 2014 and the revised Plan submitted to DP&I. The Water Management Plan (Revision 3), section 8 addressed erosion and sediment control and Appendix 1 - Erosion and Sediment Control Plan, was approved by DP&E on 20 December 2016.

Water Management Plan section 8 addresses clean water diversion and erosion and sediment controls, design objectives and performance criteria for site water management, design objectives and performance criteria for site water management. Water Management Plan Appendix 1 is a stand-alone Erosion and Sediment Control Plan and addresses the requirements of Project Approval Schedule 3 condition 26(b).

All structures installed for sediment and erosion control are planned to remain in place for the life of the Teralba Quarry or until they are no longer required.

The sediment and erosion control measures that form the basis of the Erosion and Sediment Control Plan for the Teralba Quarry site include control measures and commitments to satisfy the condition of approval:

Project Approval Schedule 3 condition 26(b) Requirements	Implementation Status	Compliance Status
Surface Water Management Plan, that includes:	Erosion and sediment control is presented in the Water Management Plan Revision 3 section 8:	Compliant
<ul style="list-style-type: none"> a detailed description of the surface water management system on site, including the: <ul style="list-style-type: none"> o clean water diversion systems; o erosion and sediment controls; 	<ul style="list-style-type: none"> Section 8 and Appendix 1 of the Water Management Plan address erosion and sediment control for the Teralba Quarry site. 	Compliant
<ul style="list-style-type: none"> design objectives and performance criteria for proposed: <ul style="list-style-type: none"> o erosion and sediment control structures; o water storages; and o control of water pollution from rehabilitated areas of the site; 	<ul style="list-style-type: none"> Section 7 addresses objectives and performance criteria for erosion and sediment control and Appendix 1 provides the detailed Erosion and Sediment Control Plan for the Teralba Quarry. 	Compliant
<ul style="list-style-type: none"> a detailed review the dirty water management system to: <ul style="list-style-type: none"> o determine whether the capacity, integrity, retention time and management of the system are sufficient to ensure that water discharged from the site meets performance criteria and propose any upgrades necessary to meet these criteria; o assess appropriate options to improve storage and retention times in accordance with The Blue Book - <i>Managing Urban Stormwater: Soils and Construction</i> (Landcom 2004); 	<ul style="list-style-type: none"> Section 7.3 provides a review of the dirty water management system, and section 8 outlines options to improve storage and retention times in accordance with The Blue Book 	Compliant
Erosion and Sediment Control Measures		
Ensure that groundcover is maintained in areas not utilised for quarry operations.	Surface areas are not disturbed and groundcover is maintained where site areas are not required for quarrying operations.	Compliant Ongoing

Project Approval Schedule 3 condition 26(b) Requirements	Implementation Status	Compliance Status
Vehicle movements on site are limited to existing tracks with delineated vehicle access to and from working areas to minimise surface disturbance and damage to adjacent vegetation	Vehicle movements on site only occur on existing tracks with delineated vehicle access to and from working areas, in accordance with the site Transport Management Plan.	Compliant Ongoing
Barrier markers installed to delineate NO-GO zones. Barrier fencing (that may be star pickets and tape/wire or sediment fencing mesh), will be used to delineate vehicle access to and from working areas to minimise damage to adjacent vegetation (not involved in site works).	NO-GO zones are delineated with colour coded markers. 	Compliant
	NO-GO colour coded markers along the edge of internal access tracks.	
Revegetation undertaken progressively as quarry operation extraction is completed in active areas.	All areas available for interim rehabilitation within the Mid Pit Extraction Area have been revegetated. Disturbed areas within the Teralba Quarry Site not required for operational purposes has been previously rehabilitated.	Compliant Ongoing
Soil stockpiles are maintained in accordance with "Managing Urban Stormwater Volume 1 (Landcom, 2004) and Volume 2E "Mines and Quarries" (DECC, 2008). <ul style="list-style-type: none"> Stockpiles located within the Southern Extraction Area or Mid Pit Extraction Area are greater than 5m away from existing vegetation, surface water flow areas and access roads / tracks; All runoff from the stockpile areas is contained within the Southern Extraction Area or Mid-Pit Extraction Area; and All topsoil stockpiled is used for rehabilitation activities to provide viable soil and a seed bank for rehabilitation of the disturbed areas of the quarry and to reduce potential for erosion and sediment loss. 	All soil stockpiles (unless very short term), are stabilized using appropriate slopes (1:3) and vegetated. <ul style="list-style-type: none"> Stockpiles within the Southern Extraction Area are more than 5 m away from existing vegetation, water flow channels/drains, and roads. Stockpiles are generally constructed as low, elongated mounds. All runoff from the stockpiling areas is contained within the Southern Extraction Area. Long-term rehabilitation plans provide for all topsoil stockpiled to be used for rehabilitation activities at the Teralba Quarry. 	Compliant Ongoing

5.9.4 Sediment Dams

Existing sediment dams are located in the active Southern Extraction Area and the Mid-Pit Area of the Teralba Quarry site to collect surface runoff from the various catchment areas on site. The quarry site including existing operational areas and the approved extensions have seven (7) sub-catchments for surface water management (Refer to Figure 5.9.4 below).

The calculations for the sediment dam capacities were based on the New South Wales Landcom "Blue Book", "Managing Urban Stormwater – Soils and Construction Volume 1 (2004) for site soils as classified as "D/F". Selection of the rainfall is based on "Managing Urban Stormwater, Soils and Construction, Volume 2E, Mines and Quarries", which recommends a 90th percentile ARI for areas planned to be disturbed greater than 3 years. Based on the predicted total cleared areas, the total storage volumes of the sediment dams were calculated as:

Storage	Description	Capacity (ML)	Surface Area(m ²)
Dam A	Flooded mine adit	1.2	400
Dam B	Final sediment dam	0.3	200
Dam C	Vegetated sediment dam	0.3	200
Dam D	Vegetated sediment dam	35.0	3,625
Dam E	Reed bed sediment dam	9.0	3,000
Dam F	Stockpile sediment dam	0.7	230
Dam G	Lined process water storage dam	10.8	2,700
Dam H	Initial sediment dam	4.3	1,440
Dam J	Sediment dam – Western Mid-Pit	36.0	6,300
Dam K	Sediment dam – Eastern Mid-Pit	2.6	4,500
Dam L	Wheel Wash runoff	0.5	300
Dam M	Sediment Dam – Northern Extension	18.0	4,200

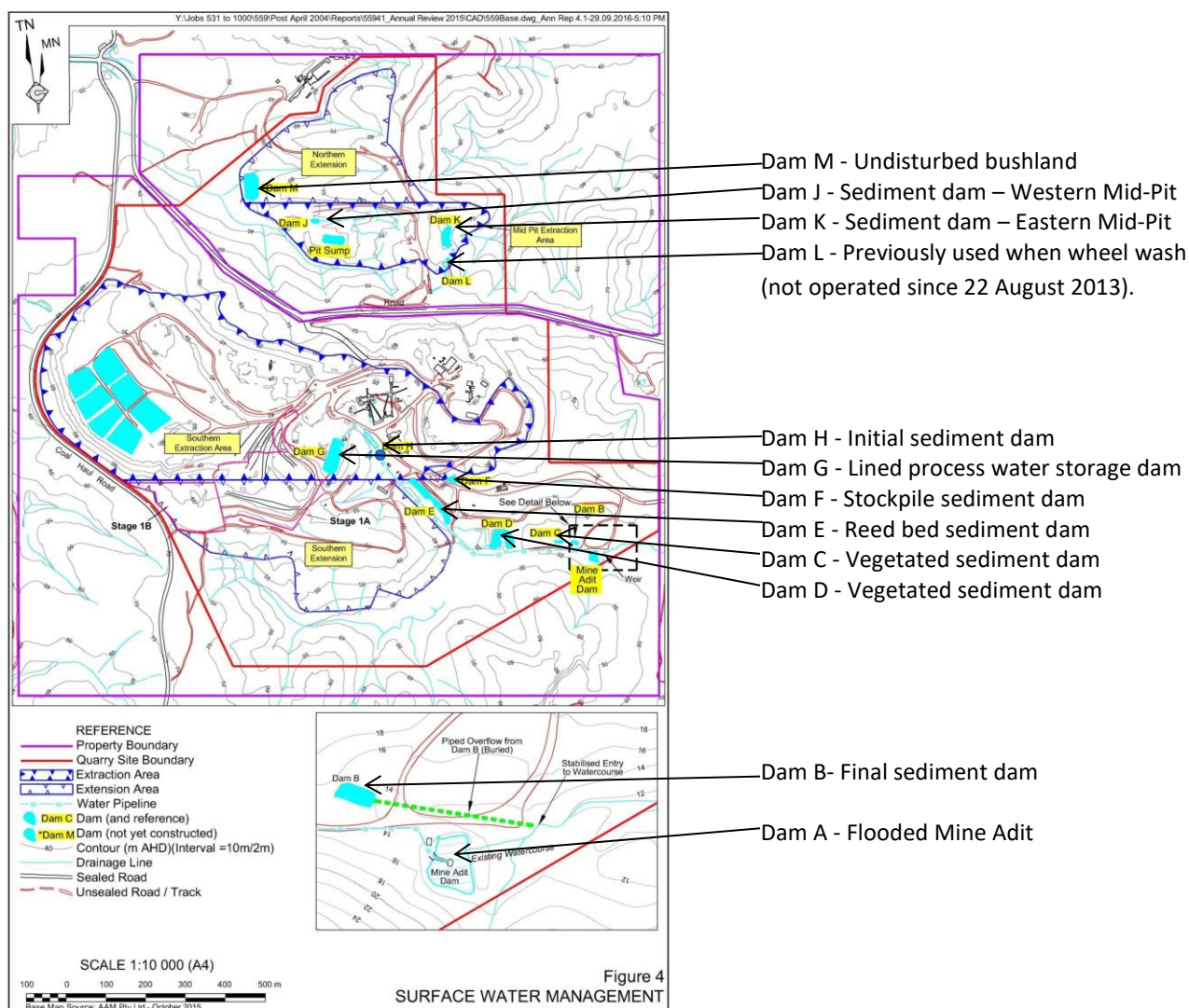


Figure 5.9.4: Teralba Quarry Surface Water Management Dams

5.9.5 Sediment Dam Operation

Runoff from heavy rainfall in excess of 100mm (experienced on 15 February 2014 and 2-3 March 2014, and April 2015) was collected in the sediment dams (Dam J and K north of Rhondda Road, and Dams B, C, D and E in the Southern Extraction Area) from the disturbed areas of the Teralba Quarry site. No direct release of water has occurred from the Teralba Quarry stormwater runoff sediment dams that originated from the Teralba Quarry operations.

Runoff water collected in the stormwater/sediment dams is reduced by infiltration through the conglomerate material into the underground workings or evaporation following the rainfall events. No treatment of the collected water has been undertaken and no discharge of Teralba Quarry water has occurred to the environment, from Dams B to M between February 2014 and February 2017.

Sediment dams inspected during the site visit (February 2017) exhibited minimal volumes of water retained after rainfall events.



Dam A – Mine Adit



Dam A – Pump for water recovery



Dam A – Discharge Point 4



Dam B - Final sediment dam



Dam B - Final sediment dam (0.3ML) following rainfall



Dam C - Vegetated sediment dam (0.3ML)



Dam D - sediment dam (35ML) with geofabric lined wall



Dam E - Reed bed sediment dam (9ML)



Dam F – Stockpile sediment dam (0.7ML)



Dam G - Lined process water storage dam (10.8ML)



Dam H – Initial sediment dam (4.3ML)



Dam J - Mid-Pit north of Rhondda Road



Dam J - Mid-Pit (capacity 36ML)



Dam K – eastern end of Mid-Pit, north of Rhondda Road.



Dam Wall Dam K - Mid-Pit (capacity 2.6ML)

The Mine Adit Dam A overflowed into Dam B during an extreme rainfall events in April 2015 and January 2016 resulting in a discharge from EPA Monitoring Point 5. The rainfall event commenced on the 20 April with 347mm of rainfall recorded at the Teralba Quarry meteorological station over the subsequent 72 hours (almost four times the median monthly April rainfall (89mm) at the nearest Bureau of Meteorology weather station (Bolton Point, BoM ID 61133). The January 2016 rainfall event recorded 278mm of rain. Discharge of water from Mine Adit Dam A following the April 2015 and January 2016 rainfall events was tested in accordance with the EPL 0536 condition M2.3 and found to comply with the discharge water quality criteria in EPL 0536 condition L2.4. (Note that water overflow discharged from Mine Adit Dam 'A' originated from the old mine workings and was not able to be managed by Metromix). The overflows were reported to the EPA in accordance with EPL 0536 condition R4.1 as advice, as the overflow water did not result from the Teralba Quarry activities.

5.9.6 Conclusion

The erosion and sediment control measures on the Teralba Quarry site have adequate capacity to retain surface runoff from disturbed areas of the Teralba Quarry and to settle sediment. The calculations for the sediment dam capacities are conservative and the sediment dams inspected during the site visit had their design capacity available for collection and settlement of sediment from surface runoff water collected in the dams. In general, severe rainfall events were managed within the stormwater runoff and sediment ponds capacities with the dams capable of receiving and controlling all surface runoff in the event of heavy rainfall. No direct discharge to the environment had occurred from the Teralba Quarry stormwater management and sediment ponds between February 2014 and February 2017.

5.10 Groundwater

[Project Approval 10_0183 Schedule 3 condition 26(c)]

5.10.1 Regional Hydrogeology

The Teralba Quarry is underlain by strata belonging to the Moon Island Beach Subgroup of Late Permian Age Newcastle Coal Measures. The Moon Island Beach Subgroup is stratigraphically the highest in the Newcastle Coal Measures and consists of:

- Munmorah Conglomerate;
- Wallarah Coal Seam;
- Teralba Conglomerate;
- Great Northern Coal Seam (GNCS);
- Eleebana Formation; and
- Fassifern Coal Seam (FCS).

The nearest aquifer beneath the Teralba Quarry extraction areas is the mined Great Northern Coal Seam (GNCS) which lies below the existing floor of the Teralba Quarry (at approximately 20m AHD). The primary aquifer in the region is contained within the strata and voids of the Great Northern Coal Seam. Aquifers present at greater depths include the Fassifern Coal Seam (FCS) (also extensively mined beneath the site).

In the Newcastle Coal Measures, the majority of the aquifers comprise the coal seams with permeability values generally one to two orders of magnitude higher than the interburden strata. Many of the coal seams have been mined and contain voids, which greatly increase the permeability and storage capacity.

Teralba Quarry is located to the northeast of the Macquarie Syncline, a broad flat fold structure which generally has all strata dipping to the south and southeast at approximately 2° to 4°. Groundwater flows down dip beneath the Teralba Quarry site from the northern to south-south-eastern corner. Groundwater in the GNCS is partially intercepted within a mine adit excavated during the life of the Northern Extended Colliery to assist in draining the former coal mine, and is located in the south-east of the Teralba Quarry site where the potential head of the groundwater intersects the surface topography. This groundwater is collected in Mine Adit Dam A, before discharging into an open channel that eventually flows to Lake Macquarie via a concrete channel through Teralba village.

5.10.2 Local Hydrogeology

The principal groundwater resources beneath the Teralba Quarry occur in the former underground coal mines that convey both natural infiltration and inflows from surrounding coal mines and the processing silts from the Metromix processing plant. Current extraction of Teralba Conglomerate from the Teralba Quarry, occurs directly above the Great Northern Coal Seam.

Both the GNCS and the FCS were mined extensively within the former Rhondda Colliery located immediately to the west of Teralba Quarry. It is considered highly likely that the former mine workings beneath the quarry and those of Rhondda Colliery are joined for the passage of water, forming a continuous aquifer.

The top of the GNCS occurs at between 19m to 25m AHD, below the base of the quarry extraction areas. This seam is a significant artificial aquifer having a large catchment and a large recharge source from the up-gradient Rhondda Colliery workings adjacent to the north western boundary of the Teralba Quarry.

Groundwater flow is governed by the dip of the coal seam which is to the south and southeast. Groundwater flows from the Rhondda Colliery and then underneath the Teralba Quarry.

5.10.3 Environmental Assessment

[Environmental Assessment for the Teralba Quarry Extensions, section 5.2, November 2011]

[Environmental Assessment for the Teralba Quarry Extensions, Specialist Consultant Studies Compendium Volume 1 Part 2 Surface Water Assessment, November 2011]

The Environmental Assessment (2011) reviewed potential impacts of the project on groundwater quality reporting to the Mine Adit Dam, since the discharge of processing plant fines into the underlying coal mine workings (assessed by BMT WBM (2011), indicated that there had been no significant impact on groundwater quality from pH, ammonia, suspended solids, nitrate, chloride, fluoride, total phosphorous, zinc, selenium, arsenic and boron, and concluded that there was negligible potential for the Teralba Quarry project to impact the quality of groundwater.

The extension of the existing extraction operations in a south-westerly and northerly direction proposed in Environmental Assessment (2011) for the Teralba Quarry Extension will result in removal of the conglomerate resource above the underlying GNCS and include the planned, induced collapse of conglomerate into mined voids (within the Great Northern Coal Seam). This could potentially provide further interaction between surface water and groundwater as the voids have a higher permeability, allowing a higher infiltration of surface water into the underlying coal seam aquifer.

As part of the 2007 Water Management Plan prepared for Metromix by GHD, it was estimated that groundwater storage in the mined voids comprised 750,000ML in the GNCS (based on 50% flooded saturation), and 456,000ML in the FCS (based on 95% saturation). Based on groundwater data from 2003 and 2008, it was concluded that Teralba Quarry operations did not have a significant impact on the quality of the underlying groundwater. This absence of impact was predicted to occur throughout the remaining life of the quarry. RCA (2011) concluded that the nearest licenced groundwater well (GW080494) located downgradient from the Project Site would be unlikely to be affected by the ongoing operation of Teralba Quarry.

As the existing groundwater setting and potential impacts of the Teralba Quarry project determined that there would be no measurable impact on groundwater levels and flows, or groundwater dependent ecosystems in the area around Teralba Quarry, a Groundwater Contingency Plan prepared as part of the Water Management Plan for the quarry would identify trigger levels (that would include a water quality), complementing the surface water monitoring program.

5.10.4 Statements of Commitment

[Environmental Assessment for the Teralba Quarry Extensions, section 6, November 2011]

[Project Approval 10_0183 Appendix 3]

Statements of Commitment in relation to groundwater management expressed in the Environmental Assessment for the Teralba Quarry Extensions (2011), and Project Approval 10_0183 Appendix 3 for the Teralba Quarry project were:

SoC No.	Statement of Commitment – Groundwater Project Approval 10_0183	Comment on Implementation	Compliance
6	Groundwater		
6.3	Prepare a Groundwater Management Plan, including trigger levels for actions.	Trigger values for groundwater quality were extracted from ANZECC Guidelines for Water Quality Monitoring and Reporting (NWQMS, 2000).	Compliant
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.	The water monitoring program was developed as section 9 of the Water Management Plan in August 2013, (i.e. within 6 months of receipt of this Project Approval).	Compliant
6.6	Monitor water quality at the Mine Adit Dam for pH levels, electrical conductivity, suspended solids, and oil and grease	Water quality is monitored at the EPA Approved Monitoring Point 4 (Mine Adit Dam A) for pH, electrical conductivity, suspended solids, and oil and grease in accordance with EPL 0536 condition P1.3, L2.4 and M2.3.	Compliant Ongoing

6.7	Record flows/discharges from the Mine Adit Dam as well as quarry water usage.	Water flows/discharges from the Mine Adit Dam A and quarry water usage is recorded in accordance with EPL 0536 condition L3.1 and reported in the Annual Reviews.	Compliant Ongoing
6.8	Review monitoring results to identify trends which may indicate impacts and allow mitigation measures to be implemented, if required.	Annual Reviews section 4.1 report groundwater monitoring results and comment on any trends and mitigation measures if required.	Compliant Ongoing
6.9	Ensure all monitoring data is incorporated into each Annual Environment Management Report for the Teralba Quarry	All groundwater monitoring data is reported in the Annual Reviews (AEMR) section 4.1.3 and Appendix 2.	Compliant Ongoing

4.10.5 Groundwater Management Plan

[Project Approval 10_0183 Schedule 3 condition 26(c)]

Groundwater management is included in the Water Management Plan section 7.2. The Water Management Plan prepared in August 2013 was submitted to DP&I. Comments on the Water Management Plan were provided to Metromix by DP&I on 16 January 2014. The Water Management Plan was revised and resubmitted to the DP&I for approval on 27 June 2014. Revision 3 of the Water Management Plan was submitted to DP&E on 30 September 2016 and approved on 20 December 2016:

Project Approval Schedule 3 condition 26(c) Requirements	Implementation Status	Compliance Status
Groundwater Management Plan, that includes:	Groundwater Management Plan prepared as section 7.2 of the Water Management Plan:	Compliant
<ul style="list-style-type: none"> detailed baseline data on groundwater yield and quality in the area, that could be affected by the project; 	Sections 7.2.1 to 7.2.3 outline baseline groundwater yield and quality in the area of the Teralba Quarry.	Compliant
<ul style="list-style-type: none"> groundwater assessment criteria, including trigger levels for investigating any potentially adverse groundwater impacts; 	Section 9.3 outlines the monitoring program for surface water inflows, local seam aquifers, groundwater bores and groundwater dependent ecosystems.	Compliant
<ul style="list-style-type: none"> a program to monitor: <ul style="list-style-type: none"> surface water inflows into the groundwater system beneath the site; the impacts of the project on: <ul style="list-style-type: none"> the local coal seam aquifer; any groundwater bores on privately-owned land that could be affected by the project; and 	Section 11 outlines corrective and preventative actions to respond to any exceedances of the groundwater assessment criteria.	Compliant
<ul style="list-style-type: none"> seepage/leachate from water storages or backfilled voids (including historical coal workings) on site; and 	Section 7.2 addresses seepage/leachate from water storages or backfilled voids (including historical coal workings) on the Teralba Quarry site.	Compliant
<ul style="list-style-type: none"> a plan to respond to any exceedances of the groundwater assessment criteria; 	Section 11 outlines corrective and preventative actions to respond to any exceedances of the groundwater assessment criteria.	Compliant

5.10.6 Groundwater Quality Baseline

Groundwater quality based on monthly sampling undertaken by Coal and Allied (Rhondda Colliery) from the Mine Adit Dam A between 1989 to 2009 provided the following baseline data:

Parameter	Concentration			ANZECC Freshwater Guideline
	Mean	Range		
		Minimum	Maximum	
pH	7.1	6.2	8.6	6.5 to 8.5
Electrical Conductivity (EC) $\mu\text{S}/\text{cm}$	6541	471	13,600	No guideline
Total Suspended Solids (TSS) mg/L	21.4	0.5	248	50
Ammonia (as N) mg/L	0.23	0.0025	4.02	1.43
Total Kjeldahl Nitrogen (as N) mg/L	0.85	0.02	3.4	No guideline
Nitrates (as N) mg/L	0.25	0.0025	10.9	3.4
Chloride (Cl) mg/l	1,800	86	5,200	No guideline
Sulphate (SO4) mg/L	509	48	1,200	No guideline
Total Phosphorus (as P) mg/L	0.078	0.003	0.71	0.01
Bromide mg/L	6.59	0.1	50	No guideline
Fluoride mg/L	0.4	0.2	1.2	No guideline
Arsenic (As) $\mu\text{g}/\text{L}$	1.31	0.05	8.6	0.094
Boron (B) $\mu\text{g}/\text{L}$	0.45	0.07	1.0	0.68
Selenium (Se) $\mu\text{g}/\text{L}$	0.51	0.25	7	0.011
Zinc (Zn) $\mu\text{g}/\text{L}$	0.023	0.01	1.0	0.015

5.10.7 Groundwater Quality Monitoring Results

Water quality data collected during monitoring for the Teralba Quarry conducted in accordance with the approved Water Management Plan section 9 has indicated:

- pH ranged from 6.8 to 8.2, (within the ANZECC Guideline values and compliant with EPL 0536 criteria in L2.4 of 6.5 to 8.5).
- Total Suspended Solids ranged from <5 to 19 mg/L (i.e. compliant with EPL 0536 criteria of less than 50 mg/L).
- Electrical Conductivity (EC) ranged from 834 to 2480 $\mu\text{S}/\text{cm}$ and were similar in water from the Mine Adit (Dam A) and downstream waters.
- Average ammonia and nitrate levels were less than ANZECC Guidelines.
- Mean concentrations for dissolved metals were generally less than ANZECC trigger levels.

A Pollution Study and Reduction Program required under EPL 0536 condition 8-U1.1 to U1.3 was conducted between September 2013 and December 2015, to assess pollutants in discharges from EPL 0536 monitoring point 4 (Mine Adit Dam A), to determine the levels of suspended and dissolved metals.

The trigger values utilised in the water quality data assessment obtained from ANZECC, identified environmental values for aquatic ecosystems, visual amenity and secondary contact recreation protection, for the Lake Macquarie and Tuggerah Lakes catchments affected by urban development.

The results of the water quality assessment from EPL Monitoring Point 4 – Mine Adit Dam A (groundwater source) presented in the reports prepared to satisfy EPL 0536 condition 8-U1.1 to U1.3, demonstrated that the Teralba Quarry operations had not adversely impacted the water quality collected in the Mine Adit Dam.

5.10.8 Groundwater Dependent Ecosystems

No groundwater dependent ecosystems have been identified within the Teralba Quarry project site. The flora survey of the Teralba Quarry site, confirmed that terrestrial woody vegetation potentially dependent on groundwater, such as swamp sclerophyll forest and wet heath, did not occur within the project site (Idyll Spaces, 2011). Monthly water monitoring from EPL approved monitoring points (EPL condition P1.3) has demonstrated compliance with the water assessment criteria:

Water Quality Monitoring EPA Approved Monitoring Point 4 – Mine Adit Discharge (Feb 2014 to Dec 2017)			
Parameter	Monitored Range	EPL Criteria	
pH	7.1 – 7.9	6.5 – 8.5	Compliant – February 2014 to December 2016
Total Suspended Solids (TSS) mg/l	<5 - 26	< 50	Compliant – February 2014 to December 2016
Electrical Conductivity (EC)	1890 - 2410	No EPL criteria	Compliant – February 2014 to December 2016

5.10.9 Conclusions

The revision of the Water Management Plan to address the comments from DP&I on groundwater assessment criteria, including trigger levels, a program to monitor surface water inflows into the groundwater system beneath the site and a program to monitor the impacts of the project on the local aquifer, were addressed in 2014 and the Water Management Plan was further revised and approved on 20 December 2016.

The results of the groundwater quality assessment from EPL Monitoring Point 4 – Mine Adit Dam A (groundwater source) prepared to satisfy EPL 0536 condition 8-U1.1 to U1.3, demonstrated that the Teralba Quarry operations had not adversely impacted the water quality collected in the Mine Adit Dam.

5.11 Transport Management

[Project Approval Schedule 3 conditions 31 to 44]

[Statements of Commitment 9.1 to 9.8]

5.11.1 Environmental Assessment - Traffic

[Environmental Assessment for the Teralba Quarry Extensions, section 5.1, November 2011]

[Environmental Assessment for the Teralba Quarry Extensions, Specialist Consultant Studies Compendium Volume 1 Part 1 Transport Assessment, November 2011]

The Environmental Assessment (2011) -Traffic Assessment completed for the Teralba Quarry Extension Project was based on extensive traffic counts at intersections and throughout the road network used by trucks travelling to and from the Teralba Quarry. Traffic modelling showed that the intersections on the surrounding road network will continue to operate satisfactorily with the quarry traffic under current 2011 conditions and in 2022. The comprehensive SIDRA analyses undertaken of the 11 key intersections established that all intersections used by trucks travelling to and from Teralba Quarry would operate satisfactorily with a level of service C or better for both the morning and afternoon peak periods in 2022.

A contribution will be paid to the Council, based upon the quantity of products leaving the quarry, to fund the accelerated pavement wear and tear and road upgrade requirements attributable to use of these roads by quarry-generated traffic.

No quarry trucks had been involved in any of the accidents identified on the surrounding road network (prior to 2011) and as the project would not increase production beyond existing levels, there was no evidence to suggest that the quarry extension would result in any additional adverse safety conditions. A code of conduct for drivers travelling to and from the quarry would be implemented to ensure that safety and responsible driver behaviour is fostered.

5.11.2 Statements of Commitment

[Environmental Assessment for the Teralba Quarry Extensions, section 6, November 2011]

[Project Approval 10_0183 Appendix 3]

Statements of Commitment in relation to traffic and transport management expressed in the Environmental Assessment for the Teralba Quarry Extensions (2011) and Project Approval 10_0183 Appendix 3 for the Teralba Quarry project were:

SoC No.	Statement of Commitment – Traffic Project Approval 10_0183	Comment on Implementation	Compliance
9	Traffic and Transport		
9.1	Limit laden quarry-related truck movement numbers through Teralba: – 9 per hour; and – 85 per day	Truck movement numbers transporting product from the Teralba Quarry have generally been compliant with Project Approval 10_0183 Schedule 2	Compliant

SoC No.	Statement of Commitment – Traffic Project Approval 10_0183	Comment on Implementation	Compliance
		conditions 8 and 9 (refer to section 5.11.5).	
9.2	Ensure that no product trucks from Teralba Quarry travel eastward through Teralba between 6:00pm and 6:00am.	Raw materials from Teralba Quarry are only transported on two (2) approved routes between 6.00pm and 6.00am. No travel is allowed through Teralba village during these times (Drivers Code of Conduct section 4).	Compliant Ongoing
9.3	Ensure all vehicles exiting the Project Site pass through a wheel-wash facility to remove dust generating material, prior to removal of product from within the extensions.	All vehicles exiting the Teralba Quarry site pass through a wheel-wash facility at either the western exit to Rhondda Road or eastern exit onto Railway Street, to remove dust generating material.	Compliant Ongoing
9.4	Provide a quarterly contribution to Lake Macquarie City Council during the ongoing life of the quarry if a suitable project approval is granted.	Metromix consulted with the Council in relation to the agreement for the payment of the 0.66c per tonne per kilometre (/t/km) for quarry products transported from the site on roads for which Council is liable for road maintenance funding. The Planning Agreement for the payment of the 0.66c /t/km plus GST was signed on 6 February 2017.	Compliant
9.5	Prepare (within 4 months of receipt of project approval), 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 	The Traffic Management Plan Drivers Code of Conduct, was developed for the Teralba Quarry and implemented in relation to: <ul style="list-style-type: none"> – times that trucks can operate, especially through Teralba (section 4) – speed limits (section 3); – duty of care to other drivers and pedestrians (section 1); – complaints procedure (section 5); – covering loads Traffic Management Plan section 7); and – avoid using of exhaust brakes (section 4). 	Compliant Ongoing
9.6	Undertake all transport activities in accordance with the project approval and Environment Protection Licence 536.	Transport activities associated with the Teralba Quarry occur in accordance with the conditions of the Project Approval and approved Traffic Management Plan.	Compliant Ongoing
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.	Only trucks owned by Metromix, or its shareholders are used to transport products between 10:00pm and 6:00am to ensure transport noise is managed between these hours.	Compliant Ongoing
9.8	Ensure that all project-related vehicles are regularly serviced to ensure engine efficiencies are maintained at a standard that limits truck noise.	All Metromix project related vehicles are serviced regularly at the site workshops and maintained to ensure efficiency and to meet truck noise criteria.	Compliant Ongoing

5.11.3 Transport Management Plan

[Project Approval Schedule 3 condition 44]

The Transport Management Plan was prepared by GTA Consultants Pty Ltd to satisfy Project Approval Schedule 3 condition 44 and was approved by DP&I on 10 October 2013.

The Traffic Management Plan (section 6.2) and Appendix 1 Drivers Code of Conduct describe Competence Training and Awareness for all drivers / employees and covers site traffic rules, safe site delivery, maximum hourly despatch rates and operation and maintenance of wheel washes. All trucks leaving the Teralba Quarry site must also have their loads covered and pass through a wheel wash before exiting the Teralba Quarry site onto public roads.

Trucks were observed to comply with the covered load requirement and passage through the wheel wash prior to leaving the site, during the audit site inspection (February 2017).

5.11.4 Drivers Code of Conduct

[Traffic Management Plan – Appendix 1]

The Teralba Quarry Traffic Management Plan Appendix 1 - Drivers Code of Conduct applies to all drivers (employees and contractors) involved in the transport of product on-site and off-site. Compliance with the Drivers Code of Conduct is mandatory for all personnel who operate vehicles on and off the Teralba Quarry site.

The Drivers Code of Conduct is comprehensive and identifies the travel routes and approved hours for transport activities associated with the operation of the quarry.

Disciplinary action is defined for drivers failing to meet the requirements of the Drivers Code of Conduct and/or Metromix receiving a confirmed complaint regarding individual vehicles or on-road driving behaviour.

5.11.5 Truck Movement Records

Project Approval 10_0183 Schedule 3 condition 8 and 9 specify the truck movements approved for transport of extracted material:

	Extractive Material Transport										
8	<p>The Proponent shall not:</p> <ul style="list-style-type: none"> (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 un-laden trucks via the Railway Street entrance between 6 pm and 7 am. 										
9	<p>The Proponent shall limit the total hourly truck dispatch rates from the site to the levels shown in Table 1.</p> <p>Table 1 – Truck Dispatch Hours</p> <table border="1"> <thead> <tr> <th>Dispatch Period</th><th>Max Hourly Dispatch</th></tr> </thead> <tbody> <tr> <td>6:00am – 7:00 am</td><td>Up to 28 loaded trucks</td></tr> <tr> <td>7:00am – 6:00pm</td><td>Up to 20 loaded trucks</td></tr> <tr> <td>6:00pm - 5:00am</td><td>Up to 6 loaded trucks</td></tr> <tr> <td>5:00am - 6:00am</td><td>Up to 12 loaded trucks</td></tr> </tbody> </table> <p>Note: Dispatch times and maximum hourly rates westwards along Rhondda Road or eastwards through Teralba are further limited by condition 8 above.</p>	Dispatch Period	Max Hourly Dispatch	6:00am – 7:00 am	Up to 28 loaded trucks	7:00am – 6:00pm	Up to 20 loaded trucks	6:00pm - 5:00am	Up to 6 loaded trucks	5:00am - 6:00am	Up to 12 loaded trucks
Dispatch Period	Max Hourly Dispatch										
6:00am – 7:00 am	Up to 28 loaded trucks										
7:00am – 6:00pm	Up to 20 loaded trucks										
6:00pm - 5:00am	Up to 6 loaded trucks										
5:00am - 6:00am	Up to 12 loaded trucks										

The number of truck movements associated with the quarry activities and restricted time frames specified in the Project Approval Schedule 2 conditions 8 and 9, are recorded daily on the Truck Movement Reporting Forms. The number of laden trucks dispatched from the Teralba Quarry between January 2014 and December 2016, generally complied with the limits of hourly truck dispatch rates in Project Approval Schedule 2 conditions 8 and 9.

Records between January 2014 and December 2016 exhibited a small number of non-compliances with the truck dispatch time limits. Table 5.11.5 shows the number of exceedances recorded for trucks leaving the Teralba Quarry site recorded over each calendar year.

The number of laden trucks dispatched from the Teralba Quarry during January 2016 to February 2017 was compliant with Project Approval 10_0183 Schedule 2 condition 8 and 9 requirements.

Between January 2014 and December 2015, a small number of non-compliances with the truck dispatch time limits was recorded by Metromix.

Table 4.11.5 shows the number of exceedances recorded for trucks leaving the Teralba Quarry site over each calendar year.

Table 5.11.5: Exceedance of Truck Numbers Leaving Teralba Quarry January 2014 to December 2016

Time Period	Eastwards Max daily / Hourly				Westwards Max daily / Hourly					Max. Daily Total
	6am to 7am	7am to 6pm	6pm to 6am	Daily Total	5am to 6am	6am to 7am	7am to 6pm	6pm to 5am	Daily Total	
2014	0	5 ¹	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	1 ²	0	0
2016	0	0	0	0	0	0	0	0	0	0
Approved Limits	Hourly 8	Daily 85 Hourly 8	0	Daily Total 85	Hourly 12	Hourly 28	Daily 220 Hourly 20	Daily 66 Hourly 6	Daily Total 241	326

¹ 20 March, 29 May, and June 2014 – 9 truck movements in one hour occurred through Teralba between 7.00am and 6.00pm (approved truck movements between 7am and 6.00pm up to 8 loaded trucks per hour) on five (5) occasions. The total number of trucks despatched during the calendar year 2014, was 21,918 of which the five (5) non-compliances over the 12month period.

² 26 March 2015 - 7 trucks per hour travelled westward along Rhondda Road between 6.00pm and 5.00am (approved truck movements up to 6 loaded trucks per hour) on one (1) occasion. The extra truck movement was a result of one driver adjusting his departure time to comply with his mandatory 10hour rest break. The total number of trucks despatched during calendar year 2015 was 21,019, with only the one non-compliance.

No complaints were received by Teralba Quarry between January 2014 and February 2017 in relation to the trucks leaving the quarry site when the exceedance of the approved truck numbers were recorded.

5.11.6 Wheel Wash Facilities

Wheel washes have been installed at the exits from the Teralba Quarry site to Rhondda Road and Railway Street from the Southern Extraction and Southern Extension Area.

The wheel washes have multiple water sprays that are activated when the truck proceeds slowly through the wheel wash. The efficiency of the wheel wash is determined by the speed at which the truck proceeds through the wash zone and is affected by the nature / moisture content of the material on the wheels. Trucks proceeding to Rhondda Road from the Road-base Product stockpile area travel on internal roads that have hard stand base onto paved roads to the exit gate after the wheel wash. Trucks leaving the site during the audit site inspection were not observed to be tracking dirt out of the site and Rhondda Road.



Wheel wash – exit to Railway Street from Southern Extraction Area



Wheel wash—exit to Rhondda Road from the Northern Extension/Mid-Pit Area.



Rhondda Road surface at the exit from the Teralba Quarry and 200m from the quarry exit showing the clean state of the road with no tracking of dirt from the exiting trucks.



5.11.7 Conclusions

The Traffic Management Plan and Drivers Code of Conduct are adequate for the control of trucks and drivers associated with the transport of product from the Teralba Quarry. The number of truck movements associated with the quarry activities and restricted time frames specified in the Project Approval Schedule 2 conditions 8 and 9, are recorded daily on the Truck Movement Reporting Forms and the number of laden trucks dispatched from the Teralba Quarry between January 2014 and December 2016, generally complied with the limits of hourly truck dispatch rates in Project Approval Schedule 2 conditions 8 and 9. A small number of non-compliances with the truck dispatch time limits between January 2014 and December 2015. The number of laden trucks dispatched from the Teralba Quarry during January 2016 to February 2017 was compliant with Project Approval 10_0183 Schedule 2 condition 8 and 9 requirements.

5.12 Bushfire

[Project Approval 10_0183 Schedule 3 condition 45]

5.12.1 Environmental Assessment 2011

[Environmental Assessment - Teralba Quarry Extensions, section 5.12, November 2011]

The Lake Macquarie City Council Bushfire Prone Land Map (2007) indicates that the Southern Extraction Area is not bushfire prone due to the extensive clearing undertaken. The majority of land surrounding the Teralba Quarry site is considered to be bushfire prone as it includes large areas of Bushfire Vegetation Category 1, with small areas of Bushfire Vegetation Category 2.

On the basis of the Bushfire Prone Land Mapping, the specifications and requirements of “*Planning for Bushfire Protection 2006*” (PBP) by the NSW Rural Fire Service (RFS, 2006) were considered for the Teralba Quarry development

(with specific attention provided to the consideration of appropriate Asset Protection Zones (APZ)) and construction requirements for the buildings and other structures on the quarry site.

Quarrying in the Southern and Northern Extension Areas, and processing and ancillary activities undertaken on the Teralba Quarry site would increase the number and type of ignition sources. However, the controls and safeguards adopted would ensure that the potential for fire initiation and spread within the Teralba Quarry project site would be minimised.

5.12.2 Statements of Commitment

[Environmental Assessment for the Teralba Quarry Extensions, section 6, November 2011]

[Project Approval 10_0183 Appendix 3]

Statements of Commitment in relation to bushfire management expressed in the Environmental Assessment for the Teralba Quarry Extensions (2011) and Project Approval 10_0183 Appendix 3 for the Teralba Quarry project were:

SoC No.	Statements of Commitment – Bushfire Project Approval 10_0183	Comment on Implementation	Compliance
15	Bushfire		
15.1	Adopt appropriate controls during re-fuelling.	<ul style="list-style-type: none"> Refuelling of equipment or vehicles only occurs within the designated fuel bay or within specified cleared areas of the Project Site. Vehicles are turned off during refuelling. No smoking policy is enforced on the Project Site. Fire extinguishers are available at refuelling areas. 	Compliant
15.2	Ensure fire extinguishers are fitted to all site vehicles.	All site vehicles / mobile equipment, carry a fire extinguisher as a requirement of the site safety rules.	Compliant
15.3	Incorporate a Bushfire Management Plan in the overall Emergency Response Plan for the quarry.	A Bushfire Management Plan (dated February 2014) was prepared as part of the Landscape Management Plan for the Teralba Quarry.	Compliant

5.12.3 Bushfire Management Plan

Project Approval 10_0183 Schedule 3 condition 45]

The Bushfire Management Plan for the Teralba Quarry was prepared in February 2014 to address the requirements of this condition and approved by the DP&I. The Bushfire Management was reviewed with the Teralba Fire Service and West Wallsend Rural Fire Service in 2016, following a bushfire that occurred on the northern side of Rhonnda Road in December 2015.

Project Approval Schedule 3 condition 45 Requirement s	Implementation Status	Compliance Status
Bushfire Management		
The Proponent shall	A Bushfire Management Plan for the Teralba Quarry was prepared in February 2014.	Compliant

(a) ensure that the project is suitably equipped to respond to any fires on site; and	Section 7.3 addresses management of bushfire hazard and active bushfires; and	Compliant
(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.	Section 7.4 describes agency co-operation	Compliant
<u>Access roads</u> Access roads would be regularly maintained to ensure safe access and egress from the Project Site in the event an evacuation is called.	The access and egress roads from the Teralba Quarry site are maintained to ensure safe access and egress in the event an evacuation is called.	Compliant Ongoing
<u>Water Availability</u> Water infrastructure would be accessible for management of ember attack on the buildings within the Project Site.	Access to all Teralba Quarry site facilities and water storages would be provided to the RFS and any reasonable assistance offered in the event of a fire.	Compliant Ongoing
<u>Asset Protection Zones (APZ)</u> According to RFS (2006), an appropriate APZ of at least 50m will be established and maintained around the buildings of the administration area	An Asset Protection Zones (APZ) has been established around the administration buildings and infrastructure areas.	Compliant
According to RFS (2006), an APZ of at least 20m will be established and maintained around the infrastructure located within the infrastructure area.	The infrastructure area is located below an 8m high wall with Dry Sclerophyll Forest (Open Forest) (shrub/grass sub formation) class vegetation upslope. An APZ of approximately 20m has been established and maintained around the infrastructure area.	Compliant
<u>Fuel</u> Fuel loads within the Quarry Site will be managed in conjunction with Metromix obligations in relation to rehabilitation of the Quarry Site and Biodiversity Offset Requirements.	Fuel loads within the APZ's are monitored and reduced as required. Advice in relation to fuel load management within the APZ and project site is sought from the NSW RFS and/or LMCC.	Compliant Ongoing
<u>Training</u> Training would be provided to site personnel in relation to specific fire-fighting tasks and procedures. The existing Emergency and Evacuation Management Procedures relating to bush fires would be regularly reviewed.	All site personnel receive training and response in relation to specific fire-fighting tasks.	Compliant Ongoing

5.12.4 Conclusion

A Bushfire Management Plan for the Teralba Quarry was prepared in consultation with the Teralba Fire Service and West Wallsend Rural Fire Service in February 2014. The Bushfire Management was reviewed with the Teralba Fire Service and West Wallsend Rural Fire Service in 2016. Asset Protection Zones (APZ) have been established around the administration buildings and infrastructure areas. Fuel loads within the APZ's are monitored and reduced as required with advice in relation to fuel load management within the APZ and project site sought from the NSW RFS and/or LMCC.

5.13 Chemical and Waste Management

[Project Approval Schedule 3 condition 46 to 48]

5.13.1 Environmental Assessment – Waste Management

[Environmental Assessment for the Teralba Quarry Extensions, section 2.9, November 2011]

The generation and management of waste from the Teralba Quarry operations was assessed in the Environmental Assessment section 2.9:

5.13.1.1 Overburden

The quantity of overburden extracted invariably exceeds the demand for the <100mm screened product produced from the overburden. If market demand for fill material is high, all of the overburden extracted is processed to <100mm product for sale. If demand for the <100mm product is low, overburden is placed in a depression behind the pugmill area and stored or used in rehabilitation on site, to construct the cell walls and progressively cover the completed silt cells.

5.13.1.2 Processing Plant Fines

Processing plant fines from the washed products (silt) and wash water from the wet section of the processing plant were subjected to leach tests and it was determined that the solid fraction can be classified as “inert waste” under the NSW DECC (EPA) *Guidelines for Assessment Classification and Management of Non-liquid Wastes* (Egis Consulting Australia, 1999).



Conventional above-ground silt cells with walls are constructed from overburden. Each cell covers approximately 1ha. The fines management system typically operates with two or three cells at any one time. As each cell is filled, the remaining water on the surface would be pumped off and the fines allowed to settle and further dewatered. Once sufficiently consolidated, the surface of the settled silt cell would be progressively covered with approximately 2m of overburden prior to rehabilitation. The initial silt cells were constructed on the western side of the Southern Extraction Area and have progressively advance eastward. The outer surface of each completed silt cell would be contoured with overburden to achieve the final landform.

5.13.2 Statements of Commitment - Waste

[Environmental Assessment for the Teralba Quarry Extensions, section 6, November 2011]

[Project Approval 10_0183 Appendix 3]

Statements of Commitment in relation to waste management expressed in the Environmental Assessment for the Teralba Quarry Extensions (2011) and Project Approval 10_0183 Appendix 3 for the Teralba Quarry project were:

SoC No.	Statement of Commitment – Waste Project Approval 10_0183	Comment on Implementation	Compliance
3	Waste Management		
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.	Paper and general wastes originating from the site office is placed in garbage bins located adjacent to the site office and workshop.	Compliant

SoC No.	Statement of Commitment – Waste Project Approval 10_0183	Comment on Implementation	Compliance
3.2	Segregate waste into recyclables and non-recyclable materials for removal by a licensed contractor.	Recyclable and non-recyclable materials are segregated for collection by licensed contractors.	Compliant
3.3	Organise the regular collection of industrial wastes.	Regular collection of industrial wastes is arranged as required (refer to section 5.13.5).	Compliant
3.4	Store waste oils and greases within the workshop area in either self-bunding containers or within suitably contained areas.	Waste oil and greases are stored in a bunded storage area adjacent to the on-site workshop.	Compliant
6.1	Securely store all hydrocarbon products within designated and bunded areas.	All hydrocarbon products are stored in designated areas within the workshop or the covered bunded storage area.	Compliant
6.2	Refuel and maintain all earthmoving equipment within designated areas.	Refuelling of vehicles / mobile equipment only occurs at the designated area adjacent to the bulk storage tanks.	Compliant
6.4	Prepare a Spill Management Plan to address potentially significant hydrocarbon spills.	Spill management is addressed in a Metromix Safe Working Method Statement (SWMS).	Compliant

5.13.3 Waste Management Plan

[Project Approval Schedule 3 condition 48]

A Waste Management Plan was prepared to satisfy Project Approval Schedule 3 condition 48 and approved by DP&I on 10 October 2013. Waste management hierarchy is the basis of the Teralba Quarry Waste Management Plan. The Plan identifies each waste stream and the Waste Management Matrix outlines the source / storage requirements / waste collection, treatment and disposal, and waste tracking requirements.

5.13.4 Chemical Management

The existing fuel bay has a 15,800L and a 27,400L diesel fuel tank. The bunded areas around the above ground diesel storage tanks are adequate to conform with AS 1940 specifications.



Waste oil bunded and covered storage area adjacent to the on-site workshop.



Bunded / roofed aboveground diesel storage tanks (adjacent to the waste oil and grease storage area).

Storage of 205L oil drums (of oils and lubricants for vehicle and equipment maintenance occurs in a concrete floored building and fuel bay adjacent to the truck parking area.

5.13.5 Waste Management

Silt produced from processing of the excavated conglomerate is placed in the silt cells within the Southern Extraction Area as part of the Quarry final landform construction program. Wastes produced from the quarrying of conglomerate and processing were subjected to leach tests and the solid fraction was classified as “inert waste” under the EPA *Guidelines for Assessment Classification and Management of Non-liquid Wastes*.

The various other waste streams generated on the Teralba Quarry site are separated / segregated into marked bins, for collection, reuse/ recycling and disposal, managed under contracts by licensed waste contractors:

- Sewage - an Envirocycle sewage treatment system (approved by the Lake Macquarie City Council) operates on the Teralba Quarry site. Regular maintenance of the system is undertaken by a licenced contractor.
- Waste oil is collected from the workshop sump and other locations and regularly removed on a monthly or as needs basis for recycling.
- General Solid is placed in a 3m skip bin for the disposal of general rubbish and is emptied on a weekly basis. All paper waste is separated and collected monthly by paper recyclers.
- Trans-Pacific (general waste, cardboard/ paper, plastics, waste oils and grease, air filters)
- Glass, aluminium and tins are segregated and collected fortnightly for recycling.
- Scrap metal is removed on a regular basis by One Steel.
- Tyres are reused on site for bund walls, traffic control barriers etc

5.13.6 Imported Waste

[Project Approval 10_0183 Schedule 3 condition 10 and 11]

Concrete Waste

[Project Approval 10_0183 Schedule 3 condition 10]

In addition to the wastes produced at the quarry, Metromix can receive up to 120 tonnes of recycled concrete per day from pre-mixed concrete companies principally for recycling and incorporation into various products produced on site. No more than 2,500 tonnes of concrete material can be stockpiled on the site. This concrete waste material can be added to the raw feed stockpile and incorporated with the raw feed with a front-end loader for sale.

The area of approximately 2.1ha adjacent to the active Southern Extraction Area within Lot 1 DP 224037 received concrete waste under Environment Protection Licence 13015, held by Civilake (the civil works section of Lake Macquarie City Council) until July 2015. The Environment Protection Licence 13015 was transferred to Metromix in July 2015 and the processing (i.e. crushing, screening and blending) of the 33,000 tonnes of material previously stockpiled by Civilake was completed by Metromix in 2015. Some of this crushed concrete was dispatched by Metromix to clients during 2015 and 2016.

Virgin Excavated Natural Material

[Project Approval 10_0183 Schedule 3 condition 11]

No Virgin Excavated Natural Material (VENM) or Excavated Natural Material (ENM) was imported to the Teralba Quarry site between February 2014 and February 2016.

5.13.7 Conclusions

Waste management on the Teralba Quarry site occurs in accordance with the approved Waste Management Plan. The management of the waste materials and the volumes of waste generated on the site from the Teralba Quarry activities is considered to be satisfactory. Waste is minimised where practicable and reuse / recycling occurs where possible to reduce waste going to landfill.

5.14 Heritage Management

[Project Approval Schedule 3 conditions 49]

5.14.1 Environmental Assessment

[Environmental Assessment for the Teralba Quarry Extensions, section 5.10, November 2011]

[Environmental Assessment for the Teralba Quarry Extensions, Specialist Consultant Studies Compendium Volume 2 Part 8 Heritage Assessment, November 2011]

Field investigations conducted on the Teralba Quarry site and consultation with Aboriginal stakeholders, commenced in 2003 and continued in 2008 and 2010/2011.

The Environmental Assessment Heritage Survey Reports did not identify any sites of Aboriginal origin or potential archaeological deposits within the Teralba Quarry project site during the 2003, 2008 and 2010/2011 surveys. No archaeological or cultural constraints to the extension to Teralba Quarry were identified.

5.14.2 Statements of Commitment

[Environmental Assessment for the Teralba Quarry Extensions, section 6, November 2011]

[Project Approval 10_0183 Appendix 3]

Statements of Commitment in relation to heritage management expressed in the Environmental Assessment for the Teralba Quarry Extensions (2011) and Project Approval 10_0183 Appendix 3 for the Teralba Quarry project were:

SoC No.	Statement of Commitment – Heritage Project Approval 10_0183	Comment on Implementation	Compliance
13	Heritage	A Heritage Management Plan was prepared and approved by DP&I on 19 September 2014.	Compliant
13.1	Halt all works in the immediate area if cultural objects are found and contact a suitably qualified archaeologist and Aboriginal community representative.	Works would be halted in the immediate area if cultural objects were found and a suitably qualified archaeologist and Aboriginal community representative contacted.	Not triggered
13.2	Halt all works in the immediate area if human remains are found and contact NSW Police, Aboriginal community representative and OEH.	Works would be halted in the immediate area if human remains are found and contact made with the NSW Police, Aboriginal community representative and OEH.	Not triggered
13.3	Maintain reasonable efforts to avoid impacts to Aboriginal cultural heritage values at all stages of the development works	Heritage Management Plan section 7 outlines the procedures to be followed in the event that any potential Aboriginal cultural heritage items are encountered.	Noted
13.4	Invite representatives of Local Aboriginal stakeholders to monitor initial ground disturbance activities, prior to soil stripping campaigns.	Letters were sent by registered mail inviting Aboriginal stakeholders to review of the Plan and monitor initial ground disturbance activities in 2013. No responses were received.	Compliant
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	Site Induction for all subcontractors and Metromix staff includes heritage awareness training documentation for visitors.	Compliant

SoC No.	Statement of Commitment – Heritage Project Approval 10_0183	Comment on Implementation	Compliance
	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.		
13.6	Halt all works in the immediate area if any non-Aboriginal artefacts are found and notify the Heritage Council of NSW.	Works would be halted in the immediate area if any non-Aboriginal artefacts are found.	Not triggered

5.14.3 Heritage Management Plan

[Project Approval Schedule 3 conditions 49]

A Heritage Management Plan was prepared in June 2013 to satisfy the requirements of this condition. The draft Heritage Management Plan was submitted to DP&I in August 2013 (i.e. within 6 months of the date of this Project Approval) and comments were received from DP&I on the 16 January 2014. The Heritage Management Plan was revised to address DP&I comments, and the Heritage Management Plan approved by DP&E on 19 September 2014.

5.14.4 Conclusions

A Heritage Management Plan was prepared in June 2013 and submitted to DP&I in August 2013 (i.e. within 6 months of the date of this Project Approval). No sites of Aboriginal origin or potential archaeological deposits within the Teralba Quarry project site were identified during the 2003, 2008 and 2010/2011 heritage surveys. No heritage items have been encountered on the Teralba Quarry site between 2014 and 2017.

5.15 Landscape, Rehabilitation and Biodiversity

[Project Approval 10_0183 Schedule 3 conditions 50 to 58]

5.15.1 Existing Landscape and Visual Amenity

The Teralba Quarry project site is located within undulating topography to the west of a low north-south oriented ridge line with a range of landforms and natural bushland that forms part of the foreground to the more prominent and elevated Watagan Mountains.

The Southern Extraction Area and Southern Extension are located to the west of an east-west oriented ridge and the Mid Pit Extraction Area and proposed Northern Extension lie immediately to the west of a north-south oriented ridge.

The Teralba Quarry site is criss-crossed by minor access roads and power transmission and distribution lines and a large open area of cleared land comprising the quarry and associated operations. Visually, the quarry operations are well screened from Rhondda Road and all other publicly accessible local and longer distance vantage points, principally due to the surrounding vegetation and topography.

Both the topography and remnant native vegetation provide substantial shielding of the quarry operations from residences in Teralba village. Views westward from residences on the eastern side of Myrtle Street comprise vegetation on the eastern end of the east-west ridge with a small section of the clearing for power transmission lines.

5.15.2 Flora and Fauna

[Project Approval 10_0183 Schedule 3 conditions 50 to 56]

5.15.2.1 Environmental Assessment 2011

[Environmental Assessment for the Teralba Quarry Extensions, section 5.5, November 2011]

[Environmental Assessment for the Teralba Quarry Extensions, Specialist Consultant Studies Compendium Volume 2 Part 4 and 5 Flora and Fauna Assessment, November 2011]

Flora

The cleared areas of the Teralba Quarry project site comprise:

- roads and access routes that are mostly devoid of vegetation;
- power line easements with mixed grasslands; and
- cleared low lying areas dominated by exotic grasses associated with two artificial aquatic habitats formed by dams.

It was established in the Specialist Consultant Studies Compendium Volume 2 Part 4 Flora Assessment by Idyll Spaces (2011), that these areas are not likely to be potential habitat for threatened flora.

No flora species characteristic of the Endangered Populations identified as Spotted Gum - White Mahogany - Grey Ironbark Tall Open Forest & Woodland vegetation community, was identified on the Teralba Quarry project site during the survey work completed in the 2011 study (although this vegetation community is present in the area surrounding the Teralba Quarry site).

One flora species of National and State conservation significance was recorded, namely *Tetratheca juncea*, listed as Vulnerable under the Commonwealth *Environment Protection and Biodiversity Act* (EPBC Act) and the NSW *Threatened Species Conservation Act* (TSC Act). Five sub-populations of *Tetratheca juncea* were identified in the Southern Extension Area toward the western end of the area and on the south-facing slope and two clumps of *Tetratheca juncea* were recorded in the rehabilitation area.

Callistemon linearifolius and *Grevillea parviflora* subspecies *parviflora*, listed as Vulnerable under the TSC Act and known to occur in the locality associated with the Spotted Gum – White Mahogany - Grey Ironbark Tall Open Forest & Woodland vegetation community, were not recorded within the Teralba Quarry project site despite targeted searches. The possibility of the occurrence of these species was subsequently classified by Idyll Spaces (2011) as low.

Fauna

Field fauna surveys were undertaken by Kendall & Kendall Ecological Services in November and December 2008 and August and September 2010 and were, where practicable, undertaken in accordance with the *'Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities'* (DEC, November 2004).

No species listed as endangered under the TSC Act Schedule 1 were recorded within the study area during the field surveys. Five species listed as vulnerable under the TSC Act Schedule 2 were observed within the Teralba Quarry study area:

- Little Lorikeet (*Glossopsitta pusilla*);
- Barking Owl (*Ninox connivens*);
- Eastern Freetail-bat (*Mormopterus norfolkensis*);
- Little Bentwing-bat (*Miniopterus australis*); and
- Eastern Bentwing-bat (*Miniopterus schreibersii oceanensis*).

Prior to each vegetation clearing event, a pre-clearance survey would be conducted and trees containing tree-hollows identified prior to any vegetation clearing commencing. To mitigate against the impact of loss of hollow-bearing trees, microbat nesting boxes Little Lorikeet nesting boxes would be installed in the proposed biodiversity offset area near where the hollow-bearing trees occur.

With the proposed ameliorative measures implemented across the Teralba Quarry project site, it was considered that the degree of the impact from the quarry activities would be unlikely to have an adverse effect on the life cycle of any threatened fauna species known or likely to occur within the project site.

Aquatic Fauna

Waterways and / or other water bodies are scarce within the Teralba Quarry project area. Creek lines are ephemeral and drain / infiltrate quickly after rain events. Permanent water is present in several dams situated along the easterly flowing creek in the southernmost section of the Teralba Quarry project site and sediment dams southeast of the quarry activities contain and are surrounded by reedy vegetation.

The only areas that could be called riparian are reedy areas confined to sediment ponds (Dams E and G) and a man-made water supply dam (Dam G) in the quarry. Ephemeral creek-lines within the remainder of the Teralba Quarry site do not contain riparian vegetation.

5.15.2.2 Statements of Commitment

[Environmental Assessment for the Teralba Quarry Extensions, section 6, November 2011]

[Project Approval 10_0183 Appendix 3]

Statements of Commitment in relation to flora and fauna management expressed in the Environmental Assessment for the Teralba Quarry Extensions (2011) and Project Approval 10_0183 Appendix 3 for the Teralba Quarry project were:

SoC No.	Statement of Commitment – Flora and Fauna Project Approval 10_0183	Comment on Implementation	Compliance
8	Terrestrial Flora and Fauna		
8.1	Prepare and implement a Site Vegetation Management Plan (as part of the overall Landscape Management Plan)	Landscape Management Plan February 2014 includes short, medium and long term vegetation management measures.	Compliant
8.2	Clearly define the <i>Tetratheca juncea</i> sub-populations to be retained.	Areas of <i>Tetratheca juncea</i> identified on the Teralba Quarry site have been clearly identified as NO-GO areas, to ensure protection.	Compliant Ongoing
8.3	Continue the established rehabilitation practices in appropriate areas.	Progressive rehabilitation practices for the Teralba Quarry site have included the reuse of site topsoil, overburden and biomass. These practices continue to be applied to disturbed areas to promote rehabilitation of the site.	Compliant Ongoing
8.4	Retain the extracted topsoil and vegetation within the immediate area of <i>Tetratheca juncea</i> populations and relocate to easement locations.	Topsoil removed within areas of defined populations of <i>Tetratheca juncea</i> has been directly replaced in the decommissioned power line easements. <i>Tetratheca juncea</i> has successfully propagated in the relocated soils.	Compliant Ongoing
8.5	Transfer biomass directly from vegetation clearing operations to rehabilitation areas. If it is not possible to transfer directly, stockpile material.	Rehabilitation practices established for the Teralba Quarry site have reused site topsoil, overburden and biomass. This practice continues to be applied to disturbed areas.	Compliance 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).	Weed management activities have focussed on <i>Lantana camara</i> . T.E.N.T.A.C.L.E Inc. continue to be used to control weeds throughout the Teralba Quarry site on a regular basis and reports are attached to the Annual Review reports.	Compliant 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.	The installation of nest boxes for the following species was completed in September 2014: <ul style="list-style-type: none"> • 20 microbat nest boxes. • 20 Little lorikeet nest boxes. • 30 Squirrel glider nest boxes. 	Compliant

5.15.3 Landscape Management

[Project Approval 10-0183 Schedule 3 conditions 57 to 59]

5.15.3.1 Environmental Assessment

[Environmental Assessment - Teralba Quarry Extensions, November 2011]

[Environmental Assessment for the Teralba Quarry Extensions, Specialist Consultant Studies Compendium Volume 2 Part 4 and 5 Flora and Fauna Assessment, November 2011]

The approach to manage landscape environmental impacts reflects practised at the Teralba Quarry by Metromix generally follow the Lake Macquarie City Council Scenic Management Zone A key objectives that relate to ridgelines that feature prominently within and area surrounding the Teralba Quarry project site:

“Protect the natural character of all ridgelines and the dominant nature character of hillsides by ensuring the visual impact of development is minimised.”

An important strategy in achieving this objective has been the retention of a continuous canopy of the remnant vegetation around the areas disturbed by the quarry.

Visual controls and management measures would include the following.

Vegetation removal would only occur to the eastern boundary of the Southern Extension. Existing remnant native vegetation up to 18m high would remain along its eastern side, thus affording visual screening of the lower extraction faces to the west.

5.15.3.2 Statements of Commitment - Landscape

[Environmental Assessment for the Teralba Quarry Extensions, section 6, November 2011]

[Project Approval 10_0183 Appendix 3]

Statements of Commitment in relation to noise management expressed in the Environmental Assessment for the Teralba Quarry Extensions, section 6, November 2011, and Project Approval 10_0183 Appendix 3 for the Teralba Quarry project were:

Statement of Commitment – Noise		Comment on Implementation	Compliance
SoC No.	Consolidated Project Approval 10_0183		
5	Rehabilitation and Biodiversity Offsets		
5.1	Retain 142.6ha of existing vegetation and remnant understorey vegetation as a legally protected biodiversity offset, in perpetuity.	The clearance of forest/woodland vegetation for the development of the Northern and Southern Extension Areas has been proposed, in accordance with the requirements of Project Approval 10_0183 Schedule 3 condition 52. (Refer to section 5.15.4).	In progress
5.2	Ensure that 142.6ha of retained vegetation within the Biodiversity Offset is legally protected through a Conservation Agreement pursuant to Section 69B of the <i>National Parks and Wildlife Act 1974</i> .	DP&E has granted extensions to time for development of a conservation agreement (or an alternative measure) following consultation with the relevant agencies. (Refer to section 5.15.5).	In progress

5.15.3.3 Landscape Management Plan

[Project Approval 10_0183 Schedule 3 condition 57]

A Landscape Management Plan dated January 2014 was prepared in consultation with Lake Macquarie City Council, Department of Primary Industries Catchment and Lands Division and Hunter-Central Rivers Catchment Management Authority, Division of Resources and Energy, and the Office of Environment and Heritage to satisfy the Project Approval Schedule 3 condition 57. The Landscape Management Plan was approved by DP&I on 19 July 2014. The overall objectives and key performance outcomes of implementation of this approved Landscape Management Plan are shown in Table 4.6.3.3.

Table 5.15.3.3: Landscape Management Plan Objectives and Key Performance Outcomes

Objectives	Key Performance Outcomes	Implementation	Status
To ensure compliance with all relevant project approval conditions, statements of commitment and reasonable community expectations.	Compliance with all relevant criteria and reasonable community expectations, as determined in consultation with relevant government agencies.	Landscape management is being implemented in accordance with Landscape Management Plan section 4, to comply with Project Approval 10_0183.	Compliant Ongoing
To implement appropriate progressive rehabilitation and landscape management and mitigation measures during all stages of the Quarry.	Progressive rehabilitation and landscape management and mitigation measures occur during each stage of the Quarry development.	Progressive rehabilitation is being undertaken as final quarry benches and cessation of resource extraction occurs within the quarry stages.	Compliant Ongoing
To appropriately manage site preparation works to ensure that suitable rehabilitation material remains for rehabilitation during all stages of the Quarry	Sufficient, viable rehabilitation materials are available for rehabilitation operations throughout all stages of the Quarry development.	Transfer of topsoil and subsoil onto active rehabilitation areas is occurring as vegetation removal or topsoil stripping is undertaken for each Stage of quarrying.	Compliant Ongoing
To ensure that the visual amenity of residences and public vantage points is not unacceptably impacted by Quarry related activities.	Visual amenity management measures are effective and implemented in a timely manner.	The topography and remnant native vegetation provide shielding of the existing quarry operations from residences in Teralba. Vegetation is only cleared from areas required for excavation of resource and the tree line is retained along the top of ridges to minimise visual glimpses of the quarry.	Compliant Ongoing
To establish a final landform that is consistent with that identified in the Environmental Assessment.	Final landform is safe, stable, non-polluting and, consistent with the final land use options.		Not yet applicable
To establish an appropriate final soil profile and vegetation community on the final landform.	Final soil cover and vegetation is similar to that of the surrounding areas.		Not yet applicable
To establish an appropriate beneficial final land use consistent with surrounding land uses.	Final landform is suitable for an appropriate beneficial land use that is consistent with		Not yet applicable

Objectives	Key Performance Outcomes	Implementation	Status
	surrounding land uses or Council zoning at the time of Quarry closure.		
To appropriately manage those sections of the Site that will not be used for Quarry-related activities.	Identified areas are managed in a manner that ensures appropriate beneficial use of that land.	Non-operational areas of the Teralba Quarry site are managed in accordance with Landscape Management Plan section 12.4.	Compliant Ongoing
To implement appropriate weed, pest and bushfire management measures.	Weeds, pests and bushfire risks are appropriately managed in consultation with neighbouring landholders and relevant authorities.	Weed and pest management is addressed in Landscape Management Plan section 12.2.7 and undertaken by TENTACLE Inc and reported in the Annual Reviews. Bushfire management is addressed in section 12.2.9 and the Bushfire Management Plan (with support from the Teralba Fire Service and West Wallsend RFS.	Compliant Ongoing
To implement an appropriate complaint handling and response protocol.	Complaints (if any) are handled and responded to in an appropriate manner.	Complaints would be handled in accordance with Landscape Management Plan section 18.	Not triggered
To implement appropriate corrective and preventative actions, if required.	Corrective and preventative actions are implemented in a timely manner, if required	Corrective and / or preventative actions would be implemented in accordance with Landscape Management Plan section 17, when required.	Not triggered
To implement an appropriate incident reporting program, if required.	Incidents (if any) are reported in an appropriate manner	Incidents would be handled in accordance with Landscape Management Plan section 19.	Not triggered

5.15.4 Biodiversity Offset Strategy

[Project Approval 10_0183 Schedule 3 condition 52]

The Landscape Management Plan (section 10) addresses how the implementation of the Biodiversity Offset Strategy will be integrated with the overall landscape management and rehabilitation of the Teralba Quarry site. The strategy describes the short, medium and long term measures for management of remnant vegetation and habitat on site; implementation of the Biodiversity Offset Strategy; compliance with the rehabilitation objectives and progressive rehabilitation obligations; and outlines Rehabilitation Performance and Completion Criteria.

The analysis of risks to the successful long term management of rehabilitated areas and long term security of the biodiversity offset assets is being progressed as part of the implementation of the Landscape Management Plan. The risk analysis indicated that with the implementation of management /mitigation measures proposed, the mitigated risk rating for all identified risks to rehabilitation and biodiversity offset management, would be low.

Table 5.15.4: Rehabilitation and Biodiversity Offset Area Risk Analysis

Risk Source / Event	Consequence / Likelihood	Unmitigated Risk Rating	Mitigation Measure or Activity(s)	Mitigated Risk Rating
Final slopes on rehabilitated landform too steep or do not conform with approved final landform. Failure of rehabilitation or significant cost to rectify.	Moderate / Unlikely	Moderate	Ensure all final slopes are revegetated, with less than 1:3 (V:H) slope. Inspection and survey of final slopes prior to spreading soil.	Low

Risk Source / Event	Consequence / Likelihood	Unmitigated Risk Rating	Mitigation Measure or Activity(s)	Mitigated Risk Rating
Ineffective sediment and erosion control. Potential for discharge of sediment-laden water is low as all extraction areas are internally draining.	Minor / Very Unlikely	Low	Inspect sediment and erosion control structures at EPL discharge points upon their completion and regularly thereafter.	Low
Insufficient soil/growth medium. Potential effect on rehabilitation success.	Moderate / Unlikely	Moderate	Ensure soil (where present in sufficient thickness) is used or stripped, handled and stockpiled for reuse on rehabilitated areas.	Low
Soil is adversely affected by long term storage. Potential effect on rehabilitation success.	Minor / Unlikely	Low	Minimise the period of time that soil is stockpiled.	Low
Poor seed/tube stock quality or ineffective revegetation techniques. Potential effect on success of rehabilitation	Minor / Unlikely	Low	Ensure appropriate seed and/or tube stock is obtained via a seed collection program.	Low
Inappropriate species types chosen for rehabilitation. Reduced biodiversity value of rehabilitation.	Moderate / Unlikely	Moderate	Ensure species utilised in rehabilitation are consistent with the communities in the surrounding Biodiversity Offset Area.	Low
Infestation of rehabilitated area(s) by weeds.	Minor / Possible	Moderate	Undertake ongoing weed control.	Low
Infestation of rehabilitation area(s) by feral animals.	Minor / Possible	Moderate	Undertake pest control in consultation with surrounding landholders.	Low
Quarry infrastructure (including processing plant, buildings, and ancillary equipment) inappropriately or not completely removed.	Minor / Unlikely	Low	Appropriate contractual arrangements and close supervision of the demolition contractor.	Low
Poor visual amenity management. Noticeable change in skyline views from view shed areas.	Moderate / Possible	Moderate	Ensure development of Stage 3 is only undertaken following establishment of vegetation on benches in Stage 1B.	Low

Implementation of the mitigation measures will occur over the life of the Teralba Quarry to ensure the successful long term management of rehabilitated areas and security of the biodiversity offset assets in accordance with the Landscape Management Plan.

5.15.5 Biodiversity Offsets

[Project Approval Schedule 3 conditions 52 to 53]

The Environmental Assessment (2011) described a proposed biodiversity offset strategy that focused on the provision of an offset of like-for-like vegetation within the Teralba Quarry property and progressive rehabilitation of areas no longer required for quarry-related activities.

The clearance of 25.9ha of forest/woodland vegetation to occur for the development of the Northern and Southern Extension Areas was proposed to be offset with an area Spotted Gum – White Mahogany – Grey Ironbark Open Forest and woodland community in accordance with Project Approval 10_0183 Schedule 3 condition 52, with an area of 142.6 ha to be set aside through a covenant on the land title. This offset area would represent a ratio of approximately

4.6:1 of biodiversity offset compared with the proposed area of forest/woodland vegetation to be removed. The long-term security of the biodiversity assets was planned to be described in the *BioBanking Management Plan* for the Teralba Quarry, following the approval of the long-term security of the biodiversity assets.

The requirements of Project Approval Schedule 3 condition 53 in relation to long term security of offsets was to be completed within 6 months of approval of the Landscape Management Plan by OEH. Metromix and its consultants have liaised with DP&E and OEH between 2014-2017 to develop the mechanism for securing the Biodiversity Offset Area for the Teralba Quarry. The consultation with OEH and DP&E representatives has included correspondence and numerous discussions regarding the documentation required in relation to registration of an agreement pursuant to *National Parks and Wildlife Act 1974* section 69F.

DP&E granted extensions to the time for development of a conservation agreement (or an alternative measure) following the outcomes of the meetings/correspondence with the agencies and requests from Metromix to align lodgement of the bond with securing the offsets under a Biobanking Agreement with the OEH. A Bio-banking Agreement has been delayed as OEH advised that a Bio-banking application was inhibited under the *Threatened Species (Biobanking) Regulation 2008* and this matter was due to be addressed in the broader changes of proposed amendments to the NSW biodiversity legislation, anticipated to be implemented by June 2017.

The Secretary of DP&E stated in correspondence to Metromix related to the Biodiversity offset agreement on 13 July 2016 that “the Department was prepared to provide extensions to the relevant conditions of approval until the regulations under the proposed Biodiversity Conservation Act are commenced.”

5.15.6 Rehabilitation

[Project Approval 10_0183 Schedule 3 conditions 55 and 56]

Rehabilitation of the previously disturbed areas of Teralba Quarry, has progressively occurred with native vegetation. The restored areas in various portions of the Teralba Quarry site were observed to exhibit similar vegetation diversity and community structure to the surrounding natural environment.

The construction of the internal haul roads has allowed extraction activities to commence from the surface of the western margin of Stage 1A, ensuring the retention of the most elevated ridge and retention of remnant vegetation near the eastern margin of Stage 1A. This shields the majority of the quarry operations from the eastern visual catchments as extraction activities occur below ground level.

Extraction operations in the Southern Extension Area Stage 1A commenced in December 2013 with the construction of the internal haul road and some vegetation clearance on the quarry face. Extraction operations continued to be undertaken within Stage 1A and commenced in Stage 1B of the Southern Extension in 2015. As Stage 1A quarrying activities continued through 2014 to 2016, rehabilitation on the most elevated section of Stage 1A will occur following final resource extraction in this Stage.

The initial clearing activities were undertaken in Stage 1B following the translocation of 40 *Tetratheca juncea* plants from Stage 1B.

Vegetation and topsoil/subsoil stripping has either been directly transferred to rehabilitate the silt cells (Silt Cell 1 or 2), or the material is stockpiled near the silt cells and the topsoil is reused for rehabilitation of the completed silt cells.

5.15.7 Conclusion

A Landscape Management Plan was approved by DP&I on 19 July 2014, and includes implementation of the Biodiversity Offset Strategy, integrated with the overall landscape management and rehabilitation of the Teralba Quarry site.

The requirements of Project Approval Schedule 3 condition 53 to develop a conservation agreement (or an alternative measure) in relation to long term security of biodiversity offsets has been the subject of consultation with DP&E and OEH between 2014-2017.

Rehabilitation of the previously disturbed areas of Teralba Quarry, has progressively occurred with native vegetation. The restored areas in various portions of the Teralba Quarry site were observed to exhibit similar vegetation diversity and community structure to the surrounding natural environment.

5.16 Community Complaints

[Project Approval Schedule 5 condition

Community complaints received by Metromix related to the Teralba Quarry operations between February 2014 and February 2017 are handled and actioned by the Quarry Manager in accordance with the complaints handling and response procedures outlined in each management plan. Only seven (7) complaints were received by Metromix between February 2014 and February 2017:

Date	Complaint / Issue	Response/Outcome
August 2014	A complaint from a resident in Victoria St, Teralba in August 2014 related to a water seepage in her back paddock intermittently since 2010 and asked whether Metromix Mid Pit operations would be the cause.	Metromix visited the site on three occasions and met with the Mines Subsidence Board to discuss and review old mine workings. It appeared that the coal seam outcropped in the area where the seepage originated.
June 2015	Material tracked onto Rhondda Road.	Metromix received a complaint from a member of the public regarding the tracking of fine material (mud) off site and onto local roads, specifically Rhondda Rd, in June 2015. The member of the public contacted both the EPA and Council over the matter. Metromix held discussions with both the EPA and Council and conducted a site inspection of the top and bottom gate truck wheel washes to assess the issue and improvement of the wheel wash procedure.
December 2015	Complaint about a burning rubber smell received from the Council.	Metromix received a complaint from Lake Macquarie City Council regarding a burning rubber smell in December 2015. It was established that the odour came from the Downer Road Services asphalt operation. Both Metromix and Downer spoke to the Council's Environmental Officer regarding the complaint and actions to be taken.
May 2016	Complaint from community re a truck that pulled out in front of him in Wakefield Road and he had to brake.	The truck was identified and trucking company involved was contacted in relation to the incident and the Traffic Management Plan and Drivers Code of Conduct discussed.
	Complaint re car being "sprayed" with rocks from a truck travelling along Rhondda Road into the quarry.	Metromix agreed to compensate the complainant for the damage, but was unable to determine if the truck was loaded and carting material to the Downer road surfacing facility.
	EPA received a complaint from the Lake Macquarie Council about tracking of gravel onto Rhondda Road from the top gate exit and west to the Pistol Club entrance.	Metromix submitted a report to the EPA re clean-up measures that included wash down of asphalt & concrete pavements and additional sprays & concrete work completed within the Teralba Quarry site.
October 2016	Community member complained about trucks travelling along Wakefield Road waking his family from 2am onwards	Metromix visited the community member and explained that Metromix trucks do not travel along Wakefield Road at 2am in the morning, but may leave the quarry from 3.30am onwards. Metromix agreed to look at noise abatement measures that could be put in (e.g. double glazing, shutters).

6. CONCLUSIONS AND RECOMMENDATION

The independent environmental audit of the Teralba Quarry conducted in February 2017 indicates that the development is generally in accordance with the project description and predictions outlined in the *Environmental Assessment for the Teralba Quarry Extensions*, November 2011.

The site inspection, document review and discussions with relevant Teralba Quarry personnel were undertaken during the site visit and audit program in February 2017. Additional information for verification of compliance with the Project Approval conditions was provided by Metromix as requested by the auditor following the site visit.

The findings of the independent environmental audit were:

Overall Conclusion

The operation of the Teralba Quarry at the date of this audit (February 2017), generally demonstrated compliance with the Project Approval conditions, Statements of Commitment and the Environment Protection Licence conditions.

The audit findings that indicated non-compliances only occurred on isolated occasions within the 3year period of this audit and did not result in harm to the environment or ongoing nuisance to the community. A summary of the findings that were identified as non-compliant are listed below:

Project Approval 10_0183

Non-Compliant Low Risk

Transport of product from the Teralba Quarry - identified as non-compliant with Project Approval 10_0183 Schedule 2 condition 8 and 9 in 2014 and 2015. Truck movement during 2016 were compliant for movement from the site:

	Extractive Material Transport	
Schedule 2 condition 8.	<p>The Proponent shall not:</p> <ul style="list-style-type: none"> (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 un-laden trucks via the Railway Street entrance between 6 pm and 7 am. 	<p>Transport of extracted materials between January 2014 and December 2016 indicated:</p> <ul style="list-style-type: none"> (a) less than 1 million tonnes of extracted material was transported annually from the Teralba Quarry; (b) laden trucks dispatched from the Teralba Quarry site did exceed 326 on any one day; (c) laden trucks travelling westwards along Rhondda Road did exceeded 241 per day or 20 per hour period; (d) laden trucks travelling eastwards through Teralba did exceeded 85/ day or 8/hour; <u>(e) five laden trucks travelling eastward through Teralba were recorded prior to 6 am in 2014.</u> No laden trucks travelling eastward through Teralba were recorded prior to 6 am were recorded during 2015 and 2016; (f) unladen trucks were not received via the Railway Street entrance between 6 pm and 7 am between January 2014 and February 2017.

Schedule 2 condition 9.	The Proponent shall limit the total hourly truck dispatch rates from the site to the levels shown in Table 1.	The number of laden trucks dispatched from the Teralba Quarry between January 2014 and December 2016, generally complied with the limits of hourly truck dispatch rates in Project Approval Schedule 2 condition 9. Non-compliance with the truck dispatch time limits were: Five (5) laden trucks travelling eastward through Teralba were recorded prior to 6 am during 2014 (1 in March, 1 in May and 3 in June). <u>One (1) occasion occurred between 6:00pm and 5:00am in March 2015 when the maximum number of loaded trucks despatched was seven (i.e. one more than the limit of 6 in Table 1 – Truck Dispatch Hours).</u>										
	<i>Table 1 – Truck Dispatch Hours</i>											
	<table><tr><td>Dispatch Period</td><td>Max Hourly Dispatch</td></tr><tr><td>6:00am – 7:00 am</td><td>Up to 28 loaded trucks</td></tr><tr><td>7:00am – 6:00pm</td><td>Up to 20 loaded trucks</td></tr><tr><td>6:00pm - 5:00am</td><td>Up to 6 loaded trucks</td></tr><tr><td>5:00am - 6:00am</td><td>Up to 12 loaded trucks</td></tr></table>		Dispatch Period	Max Hourly Dispatch	6:00am – 7:00 am	Up to 28 loaded trucks	7:00am – 6:00pm	Up to 20 loaded trucks	6:00pm - 5:00am	Up to 6 loaded trucks	5:00am - 6:00am	Up to 12 loaded trucks
	Dispatch Period		Max Hourly Dispatch									
	6:00am – 7:00 am		Up to 28 loaded trucks									
	7:00am – 6:00pm		Up to 20 loaded trucks									
	6:00pm - 5:00am		Up to 6 loaded trucks									
5:00am - 6:00am	Up to 12 loaded trucks											
<i>Note: Dispatch times and maximum hourly rates westwards along Rhondda Road or eastwards through Teralba are further limited by condition 8 above.</i>												

Blasting - more than one blast occurred in one day on 4 occasions in 2014 and 2015. No exceedance of Project Approval 10_0183 Schedule 3 condition 11 or EPL 0536 condition L6.2 occurred between January 2016 and February 2017:

Schedule 3 condition 11.	<p>The Proponent shall not carry out more than 1 blast a day on site, unless an additional blast is required following a blast misfire.</p> <p><i>Note: A blast may involve a number of explosions within a short period, typically less than two minutes.</i></p>	<p><u>Between February 2014 and December 2016 more than one blast conducted in one day occurred on 4 occasions:</u></p>		
EPL 0536 condition L6.2	<p>The licensee is only permitted to carry out one (1) blast per day at the premises, unless an additional blast is required following a blast misfire.</p>	Date	Times	Location
		24/4/14	1241 & 1300pm	Ramp #1
		20/5/14	1432pm	Ramp #2
		15/4/15	1350pm	Stage 1A
		23/6/15	1300pm	Stage 1A
		<p>Only one blast was conducted on any one day January 2014 and February 2017 with the exception of above, in accordance with Project Approval Schedule 3 condition 11.</p>		

Administrative Non-compliances

Biodiversity Offset and Conservation Bond - the requirements for compliance with the project approval conditions for biodiversity offsets and the associated conservation bond calculation and lodgement have been addressed by Metromix between the date of approval of the Landscape Management Plan on 19 September 2014 and the date of this audit (February 2017), through ongoing discussions and consultation with the OEH and DP&E. DP&E granted extensions to the time for development of a conservation agreement (or an alternative measure) to satisfy Project Approval 10_0183 Schedule 3 conditions 53 and 58 as the OEH advised that a Bio-banking application was inhibited under the *Threatened Species (Biobanking) Regulation 2008* and was due to be addressed in the broader changes of proposed amendments to the NSW biodiversity legislation, anticipated to be implemented by June 2017. The Secretary of DP&E stated in correspondence to Metromix related to the Biodiversity offset agreement on 13 July 2016 that “the Department was prepared to provide extensions to the relevant conditions of approval until the regulations under the proposed Biodiversity Conservation Act are commenced.”

(Refer to section 5.15.5 of this Independent Environmental Audit Report).

	Long Term Security of Offsets	
53	<p>By the end of June 2014, unless the Director-General agrees otherwise, the Proponent shall enter into a conservation agreement pursuant to section 69B of</p>	<p>The requirements of this condition were initially due by the end of June 2014. <u>Metromix and its representatives have held</u></p>

	the National Parks and Wildlife Act 1974 for the Offset Area, which records the obligations assumed by the Proponent under the conditions of this approval in relation to this area, and shall register this agreement pursuant to section 69F of the National Parks and Wildlife Act 1974. The conservation agreement must remain in force in perpetuity. If OEH is not prepared to enter into a conservation agreement, then to satisfy this condition, the Proponent may propose another conservation measure to secure the offset for approval by the Director-General.	<u>numerous discussions with DP&E and OEH representatives regarding the required documentation in relation to registration of an agreement pursuant to section 69F of the National Parks and Wildlife Act 1974. Progress has occurred through the discussions and consultation with the agencies, with extensions of time approved by the DP&E in relation to securing the offset for approval and the conservation agreement (or other conservation measure).</u>
	Conservation & Rehabilitation Bond	
Schedule 3 condition 58	Within 6 months of the approval of the Landscape Management Plan, the Proponent shall lodge a Conservation and Rehabilitation Bond with the Department to ensure that the Biodiversity Offset Strategy and the rehabilitation of the site is implemented in accordance with the performance and completion criteria set out in the Landscape Management Plan. The sum of the bond shall be determined by: (a) calculating the cost of implementing the Biodiversity Offset Strategy over the next 3 years;.....	The Landscape Management Plan was approved by DP&I on 19 September 2014. (a) <u>Costs for implementing the Biodiversity Offset Strategy will be calculated when a Biodiversity Offset Conservation Agreement pursuant to the National Parks and Wildlife Act 1974 section 69B for the Offset Area is approved and registered pursuant to section 69F of the National Parks and Wildlife Act 1974.</u>

Annual Review Submission – the 2015 Annual Review was submitted to DP&E on 29 April 2016 with the approval of DP&E. The submission of the Annual Reviews should occur by end of March each year.

Environment Protection Licence 0536

Non-Compliance (Moderate Risk)

Tracking of Material onto Public Roads - vehicles leaving the premises are required to be clean so as not cause materials or wastes to be tracked onto a public road. The Non-Compliance (Moderate Risk) incident reported to the EPA on 26 May 2016, was actioned by Metromix to minimise a repeat of the occurrence of tracking material onto Rhonnda Road.

Recommendation:

Regular monitoring of the vehicles leaving the Teralba Quarry site and the effectiveness of the wheel wash and public road condition (Rhonnda Road and Railway Street) should occur and be recorded to ensure that materials from Teralba Quarry are not tracked onto the public roads.

O6	Other Operating Conditions	
EPL 0536 condition O6.1	The licensee must ensure that activities are conducted in an environmentally satisfactory manner, so as to minimise and prevent the pollution of air and water the licensee must: (a)..... (b) <u>The licensee must have in place and implement procedures to ensure that vehicles and containers exiting the premises are in a condition to ensure that materials are not tracked, thrown, blown, fall or cast onto a public road.</u>	<u>An incident resulting in silt and clay material being tracked onto Rhondda Rd occurred on 26 May 2016. Metromix responded washing down all asphalt and concrete pavements within the Teralba Quarry site and installation of additional water sprays and completion of concreted work on the internal roads to reduce the potential for repeat occurrence during prolonged dry periods.</u>

Environment Protection Licence 0536**Administrative Non-Compliances**

Meteorological Station - the meteorological station installed at the Teralba Quarry site is required to continuously record the weather parameters for use by the quarry operators to control the generation of dust or noise emissions from the quarry activities. The battery failure in 2015 caused a period of loss of monitoring, that was repaired and the meteorological station operation reinstated to comply with the EPL condition. No further action required.

EPL 0536 M4		Weather Monitoring				
EPL 0536 condition M4.1	At the point(s) identified below, the licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1 of the table below, using the corresponding sampling method, units of measure, averaging period and sampling frequency, specified opposite in the Columns 2, 3, 4 and 5 respectively.			Metromix installed an automated meteorological station on-site, located 70m north of Rhondda Road adjacent to the access road to the Northern Extension Area. In accordance with AS 2922:1987 <i>Ambient Air - Guide for the Siting of Sampling Units</i> and the <i>Approved methods for the sampling and analysis of air pollutants in NSW</i> – Table 1 (DECC, 2005).		
	Point 19					
	Parameter	Method	Unit of Measure		Averaging Period	Frequency
	Rainfall	AM-4	mm		1 hour	Continuous
	Wind direction @10m	AM-2 & AM-4	Degrees		15 mins	
	Wind speed @10m		m/s			
	Temp @ 2m	AM-4	Degrees Celsius			
	Temp @ 10m	AM-4	Degrees Celsius			
	Sigma-Theta	AM-2 & AM-4	Degrees			
	Solar radiation	AM-4	Watts/m ²			
Relative humidity	AM-4	%	1 hour			
Recording of meteorological parameters was interrupted during 2015. The meteorological station was not operational for a period of 118 days due to a serious fault with some components that resulted in the solar battery continually losing charge shutting down the station. The faulty components were eventually identified and replaced in October 2015 remedying the fault.						

Ambient Air Quality Report – the ambient air quality monitoring report required to be submitted with the Environment Protection Licence Annual Return was not submitted to the EPA for the EPL reporting period (i.e. 1 June to 31 May) in 2014, 2015 and 2016.

Recommendation:

The Air Quality Report for submission to the EPA, be prepared for 1 January to 31 May and 1 June to 31 December each year and the report for the EPL reporting period be provided as a combined document for 1 June to 31 May for the EPA. The 1 January to 31 December calendar year report for the Annual Review required under Project Approval 10_0183 Schedule 5 condition 4 for DP&E, could then be provided as a combined document of the 1 January to 31 May and 1 June to 31 December collation.

EPL 0536 R3 Written Report		
EPL 0536 condition R3.5	The licensee must submit to the EPA a report in respect of the ambient air quality monitoring conditions within this licence at the end of each reporting period. <u>The report must be submitted with the Annual Return.</u> The report must be prepared by a suitably qualified person and include: a) an assessment of the data against air impact assessment criteria in the EPA's Approved Methods and; b) an assessment of the data in relation to the weather information required by this licence; and c) an outline of any management actions that have or will be taken to address any exceedances.	An annual air quality monitoring report and an assessment of the monitoring against limits as specified within the Environment Protection Licence has been reported in the Annual Review (project Approval 10_0183 Schedule 5 condition 4) for January to December each year. The Annual Reviews and monitoring data is available on the Metromix website. Metromix have not submitted a separate report with the EPL Annual Return for the EPL reporting period (i.e. 1 June 2014 to 31 May 2015).

Blast Monitoring Report – the blasting report required to be submitted with the EPL Annual Return was not submitted to the EPA for the EPL reporting period (i.e. 1 June to 31 May) in 2014, 2015 and 2016.

Recommendation: The Blasting Report for submission to the EPA, be prepared for 1 January to 31 May and 1 June to 31 December each year and the report for the EPL reporting period be provided as a combined document for 1 June to 31 May for the EPA. The 1 January to 31 December calendar year report for the Annual Review required under Project Approval 10_0183 Schedule 5 condition 4 for DP&E, could then be provided as a combined document of the 1 January to 31 May and 1 June to 31 December collation.

EPL 0536 condition R4.3	Reporting of Blasting Monitoring The licensee must submit to the EPA a report in respect of the blast monitoring required by this licence at the end of each reporting period. <u>The report must be submitted with the Annual Return.</u> The report must be prepared by a suitably qualified and experienced person and include: a) an assessment of the monitoring against limits as specified within this licence; and b) an outline of any management actions that have or will be taken to address any exceedances of the limits specified within this licence.	An annual blast monitoring report and an assessment of the monitoring against limits as specified within the Environment Protection Licence has been reported in the Annual Review for January to December each year. The Annual Reviews and monitoring data is available on the Metromix website. Metromix have not submitted a separate report with the EPL Annual Return for the EPL reporting period (i.e. 1 June 2014 to 31 May 2015).
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EPL 0536 R4 Other Reporting Conditions		
R4.2	<u>A noise compliance assessment report must be submitted to the EPA within 30 days of the completion of the bi-annual noise monitoring.</u> The assessment must be prepared by a suitably qualified and experienced acoustical consultant and include: a) an assessment of compliance with noise limits presented in the Noise Limits table; and b) an outline of any management actions taken within the monitoring period to address any exceedances of the limits contained in the Noise Limits table. The noise monitoring was conducted twice in 2016 (August and November). The reports were attached to the Annual Review submitted in accordance with Project Approval 10_0183 Schedule 5 condition 3. <u>The Noise Assessment Compliance Reports were not submitted directly to the EPA within 30 days of completion.</u>

Attachment A Project Approval 10_0183 conditions

Attachment B Statement of Commitments

Attachment C Environment Protection Licence No. 0536 conditions

Attachment D Environment Protection Licence No. 13015 conditions

Attachment A - Project Approval 10_0183

Attachment A - Project Approval 10_0183

Condition No.	Project Approval condition	Verification	Comments	Compliance
	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 shall 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.			Noted
	TERMS OF APPROVAL			
2.	The Proponent shall carry out the project generally in accordance with the: (a) EA; (b) statement of commitments; and (c) conditions of this approval. <i>Notes:</i> • The general layout of the project is shown in Appendix 1 and Appendix 2. • The statement of commitments is reproduced in Appendix 3.	<ul style="list-style-type: none"> Environmental Assessment - Teralba Quarry Extensions, Nov 2011 Environmental Assessment, section 6 Statement of Commitments, Nov 2011 Project Approval 10_0183 	The Teralba Quarry Extension project is being developed generally in accordance with the Environmental Assessment November 2011, the conditions of Project Approval and general layout of the project Appendix 1 and Appendix 2 of the Project Approval.	Compliant Ongoing
3.	If there is any inconsistency between the above documents, 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.		No inconsistencies were noted between the documents listed in Schedule 2 condition 2 and the development of the Teralba Quarry at the date of this audit (February 2017).	Noted
4.	The Proponent shall comply with any reasonable requirement/s of the Director-General arising from the Department's assessment of: (a) any reports, strategies, plans, programs, reviews, audits or correspondence that are submitted in accordance with this approval; and (b) the implementation of any actions or measures contained in these documents.		Metromix have prepared and submitted the reports, strategies, plans, programs, reviews, audits required by the conditions of this Project Approval.	Compliant Ongoing
	LIMITS ON APPROVAL			
	Quarrying Operations			
5.	The Proponent may carry out quarrying operations on the site until 31 December 2038. <i>Note: Under this approval, the Proponent is required to rehabilitate the site and carry out additional undertakings to the satisfaction of the Director-General. 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.</i>			Noted

Condition No.	Project Approval condition	Verification	Comments	Compliance
	Extractive Material Limits			
6.	The Proponent shall 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.		Quarrying operations have not occurred to below 20 m AHD in the Southern Extraction or Southern Extension Area, or below 24 m AHD in the Mid Pit Extraction and Northern Extension Areas.	Compliant Ongoing
7.	The Proponent shall not extract more than 1.2 million tonnes of extractive materials from the site in any calendar year.		Extraction of materials from the Teralba Quarry site was less than 1.2 million tonnes annually between February 2014 to February 2017.	Compliant
	Extractive Material Transport			
8.	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 pm and 6 am; or (f) receive un-laden trucks via the Railway Street entrance between 6 pm and 7 am.	<ul style="list-style-type: none"> Teralba Truck Movements, Jan 2014 to Dec 2016 	Transport of extracted materials between January 2014 and December 2016 indicated: (a) less than 1 million tonnes of extracted material has been transported annually from the Teralba Quarry site between January 2014 to December 2016; (b) laden trucks dispatched from the Teralba Quarry site did not exceed 326 on any one day; (c) laden trucks travelling westwards along Rhondda Road did not exceed 241 per day or 20 per hour period; (d) laden trucks travelling eastwards through Teralba did not exceed 85/ day or 8/hour; (e) five laden trucks travelling eastward through Teralba were recorded prior to 6 am in 2014. No laden trucks travelling eastward through Teralba were recorded prior to 6 am were recorded during 2015 and 2016; (f) unladen trucks were not received via the Railway Street entrance between 6 pm and 7 am between January 2014 and December 2016.	Compliant
9.	The Proponent shall limit the total hourly truck dispatch rates from the site to the levels shown in Table 1. <i>Table 1 – Truck Dispatch Hours</i>	<ul style="list-style-type: none"> SoC 2.3 Operating Hours Teralba Truck Movements, Aug 2014 Teralba Truck Movements, Sep 2013 Teralba Truck Movements, Oct 2015 Teralba Truck Movements, Nov 2016 	The number of laden trucks dispatched from the Teralba Quarry between January 2014 and December 2016, generally complied with the limits of hourly truck dispatch rates in Project Approval Schedule 2 condition 9. Non-compliance with the truck dispatch time limit occurred on: One (1) occasion between 6:00pm and 5:00am in March 2015 when the maximum number of loaded trucks despatched was seven (i.e. one more than the limit of 6 in Table 1 – Truck Dispatch Hours).	2014 Non-compliant (Low Risk)
	Dispatch Period			Compliant
	6:00am – 7:00 am			
	7:00am – 6:00pm			
	6:00pm - 5:00am			
	5:00am - 6:00am			
	<i>Note: Dispatch times and maximum hourly rates westwards along Rhondda Road or eastwards through Teralba are further limited by condition 8 above.</i>			
	Receival of Concrete, Virgin Excavated Natural Material and Excavated Natural Material			
10.	The Proponent shall 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.		No concrete for recycling had been received by Metromix at the Teralba Quarry site since July 2013.	Compliant

Condition No.	Project Approval condition	Verification	Comments	Compliance
11.	The Proponent shall not receive on site more than 100,000 tonnes of virgin excavated natural material or excavated natural material in any calendar year.		No VENM or ENM was received at the Teralba Quarry site between February 2014 to February 2017.	Compliant
	SURRENDER OF CONSENTS			
2	By the end of December 2013, or as otherwise agreed by the Director-General, the Proponent shall surrender the development consent (DA 130/42) for existing operations on the site in accordance with Section 104A of the EP&A Act. <i>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.</i>	Letter to DP&I re Surrender of DA 130/42, 23 Dec 2013	Metromix surrendered DA 130/42 on 23 December 2013.	Compliant COMPLETE
	STRUCTURAL ADEQUACY			
13.	The Proponent shall 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 Mine Subsidence Board. <i>Notes:</i> <ul style="list-style-type: none"> 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 Mine Subsidence Board for the construction, erection or alteration of any improvements on the site. 		No new buildings constructed on Teralba Quarry site between February 2014 and February 2017.	Not applicable
	DEMOLITION			
14.	The Proponent shall ensure that all demolition work on site is carried out in accordance with AS 2601-2001: The Demolition of Structures, or its latest version.		No demolition of buildings or structures occurred between February 2014 and February 2017.	Not applicable
	PROTECTION OF PUBLIC INFRASTRUCTURE			
15.	The Proponent shall: (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.		No public infrastructure was damaged or relocated as a result of the Teralba Quarry project activities, between February 2014 and February 2017.	Not triggered
	PLANNING AGREEMENT			
16.	Within 12 months of the date of this approval, unless otherwise agreed by the Director-General, the Proponent shall enter into	<ul style="list-style-type: none"> SoC 9.4 – Traffic and Transport 	Metromix consulted with the Lake Macquarie City Council in relation to a planning agreement in	Compliant

Condition No.	Project Approval condition	Verification	Comments	Compliance
	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 Director-General for resolution.	<ul style="list-style-type: none"> • Project Approval 10_0183, granted 22 Feb 2013 	accordance with Division 6 of Part 4 of the EP&A Act that provides for payment to the Council for road maintenance levies. Metromix agreed to pay the Council \$0.066/t/km plus CPI. The Planning Agreement was signed on 6 February 2017 and was being registered at the date of this audit (February 2017).	
	ROAD MAINTENANCE			
17.	During the life of the project, for each calendar year, the Proponent shall 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.	<ul style="list-style-type: none"> • SoC 9.4 – Traffic and Transport 	Metromix consulted the Council and a Voluntary Planning Agreement was signed on 6 February 2017 in relation to the payment of the 0.66c per tonne per kilometre (/t/km) plus CPI for every tonne of quarry products transported from the Teralba Quarry site on roads where the Council is liable for road maintenance. The Planning Agreement was signed on 6 February 2017 and was being registered at the date of this audit (February 2017) and was subject to CPI increases.	Compliant Ongoing
	OPERATION OF PLANT AND EQUIPMENT			
18.	The Proponent shall 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.		Metromix have a workshop on-site and the quarry plant and equipment used on site is maintained and operated in a proper and efficient condition	Compliant Ongoing
	STAGED SUBMISSION OF ANY STRATEGY, PLAN OR PROGRAM			
19.	With the approval of the Director-General, the Proponent may submit any strategy, plan or program required by this approval on a progressive basis. <i>Notes:</i> <ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • Environmental Management Strategy, Aug 2013 • Air Quality Management Plan, Sep 2013 • Blast Management Plan, Sep 2013 • Noise Management Plan, Nov 2013 • Low Level Extraction Management Plan, Nov 2016 • Transport Management Plan, Sep 2013 • Waste Management Plan, Sep 2013 • Water Management Plan, Dec 2016 	All required management plans have been finalised with the Environmental Management Strategy, Environmental Management Plans and Monitoring Programs required under Project Approval 10_0183 submitted to DP&I/DP&E and approved. All management plans have been prepared and approved by DP&I/DP&E.	Compliant
				Compliant

Condition No.	Project Approval condition	Verification	Comments	Compliance				
	PRODUCTION DATA							
20.	The Proponent shall: (a) provide annual quarry production data to DRE 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).	<ul style="list-style-type: none">2014 Annual Review2015 Annual ReviewDT&I-R&E Return for Extractive Materials, Jun 2014DI-R&E Return for Extractive Materials, Jun 2015	Annual production data has been reported to DRE (DTI-RE and DI-RE), and the data is included in the Annual Reviews.	Compliant				
	SCHEDULE 3 ENVIRONMENTAL PERFORMANCE CONDITIONS							
	IDENTIFICATION OF APPROVED LIMITS OF EXTRACTION							
1.	Prior to carrying out quarrying operations under this approval, the Proponent shall: (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 Director-General.	<ul style="list-style-type: none">Boundary Survey Plan, Southern Extension, Moutrie Survey, Jun 2013Compendium of Documents for DP&I, Sep 2013	The boundaries of the approved limits of extraction for the Teralba Quarry lease activities have been marked out by a registered surveyor and the boundaries marked with coloured poles for the various activity areas.	Compliant				
2.	While ever quarrying operations are being carried out, the Proponent shall 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.		The boundaries of the approved limits of the Teralba Quarry lease activities have been marked with coloured poles for the various areas: <ul style="list-style-type: none">White poles - Stage 1A,Yellow poles – quarry extraction limitsBlue poles - Council Pugmill AreaGreen poles – Downer The posts specifically identify each of the active areas of works within the Teralba Quarry lease boundaries.	Compliant Ongoing				
	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.	<ul style="list-style-type: none">Teralba Quarry Extension Geotechnical Assessment, Mar 2006Preliminary comments on Quarry Operations – Interactions with On-site Coal Resource, 28 Nov 2012Risk Review of Current and Planned Operations for Stand-off Distances, Gases and Spontaneous Combustion, MOS and GHA, Jan 2013	The management of the Teralba Quarry operations above the underlying historical coal workings within the Great Northern coal seam and requirements of quarry workers' safety, including risks from sudden unplanned collapses, release of noxious gases or explosion of flammable gases and the risk of heating or combustion of the underlying historical coal workings, are considered and management measures implemented to ensure negligible risk in the Lower Level Extraction Plan - Practical Application of Stand-off Distances: <table><tr><th>Area</th><th>Stand-off Distance</th></tr><tr><td></td><td></td></tr></table>	Area	Stand-off Distance			Compliant Ongoing
Area	Stand-off Distance							

Condition No.	Project Approval condition	Verification	Comments		Compliance							
		<ul style="list-style-type: none">Underground Workings Collapse and Spontaneous Combustion Management Plan, Sep 2016	<table><tr><td>No underground workings</td><td>Negligible risk, no stand-off distance</td></tr><tr><td>First workings only</td><td>12 metres</td></tr><tr><td>Pillar extraction only</td><td>12 metres</td></tr><tr><td>Floor stripping and some associated pillar extraction with a higher risk from workings up to 6m high</td><td>17.5 metres</td></tr></table>	No underground workings	Negligible risk, no stand-off distance	First workings only	12 metres	Pillar extraction only	12 metres	Floor stripping and some associated pillar extraction with a higher risk from workings up to 6m high	17.5 metres	
No underground workings	Negligible risk, no stand-off distance											
First workings only	12 metres											
Pillar extraction only	12 metres											
Floor stripping and some associated pillar extraction with a higher risk from workings up to 6m high	17.5 metres											
	Lower Level Extraction Management Plan											
4.	<p>The Proponent shall prepare and implement 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 Director-General. This plan must:</p> <p>(a) be submitted for approval to the D-G prior to undertaking any such quarrying operations and within 12 months of the date of this approval;</p> <p>(b) be prepared by suitably qualified persons approved by the Director-General;</p> <p>(c) provide for the achievement of the measures set out in condition 3 above;</p> <p>(d) describe measures that would be implemented to ensure:</p> <ul style="list-style-type: none">best management practice quarrying operations are being employed on site;individual responsibilities of workers, contractors and management are detailed and understood; andcompliance with the relevant conditions of this approval; <p>(e) include a Spontaneous Combustion Management Plan, which has been prepared in consultation with DRE and Oceanic Coal Pty Ltd, to manage the potential risks and impacts of spontaneous combustion or heating of coal, that:</p> <ul style="list-style-type: none">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; andincludes appropriate short and long term contingency plans.	<ul style="list-style-type: none">Preliminary comments on Quarry Operations – Interactions with On-site Coal Resource, 28 Nov 2012Risk Review of Current and Planned Operations for Stand-off Distances, Gases and Spontaneous Combustion, MOS and GHA, Jan 2013Lower Level Extraction Plan, Jan 2013Teralba Quarry Extension Geotechnical Assessment, Mar 2016Letter from DP&E re Extension of Time for Lower Level Extraction Plan, 28 Jan 2016Letter from DP&E re Extension of Time to Submit Lower Level Extraction Plan, Extension of Time to Submit Lower Level Extraction Plan, 26 April 2016Underground Workings Collapse and Spontaneous Combustion Management Plan, Sep 2016Letter from DP&E re Approval of the Lower Level Extraction Management Plan, 23 Nov 2016	<p>(a) A Lower Level Extraction Management Plan was prepared and approved by DP&E on 23 November 2016, prior to any extraction activities within 17.5 vertical metres of historical coal workings within the Great Northern coal seam.</p> <p>(b) The Lower Level Extraction Management Plan was prepared by Mining Operation Services (MOS) and G E Holt & Associates (GHA) on the Teralba Quarry, particularly with regard to drill, blast and extraction processes above under-ground workings, and management of spontaneous combustion and gas hazards.</p> <p>(c) the Lower Level Extraction Management Plan includes the procedures to achieve the measures set out in condition 3.</p> <p>(d) the Lower Level Extraction Management Plan addresses best management practice quarrying operations. Section 6 describes responsibilities of workers, contractors and management are described and compliance with the relevant conditions of this approval outlined in section 4;</p> <ul style="list-style-type: none">the Lower Level Extraction Management Plan Appendix One Underground Workings Collapse and Spontaneous Combustion Management Plan, provides the assessment, risks of spontaneous combustion and subsurface heating for each of the existing and proposed Extraction Areas;	Compliant								
	NOISE	<ul style="list-style-type: none">SoC 10 - Noise										

Condition No.	Project Approval condition					Verification	Comments	Compliance
5.	The Proponent shall ensure that the noise generated by the project does not exceed the criteria in Table 2 at any residence on privately-owned land. <i>Table 2: Noise criteria dB(A)</i>					<ul style="list-style-type: none">• EPL 0536 condition L5.1• Noise Monitoring – Teralba Quarry, Spectrum Acoustics, 12 Sep 2014• Noise Monitoring – Teralba Quarry, Spectrum Acoustics, 12 Jul 2015• Noise Monitoring – Teralba Quarry, Spectrum Acoustics, 13 Sep 2016• Noise Monitoring – Teralba Quarry, Spectrum Acoustics, 16 Dec 2016	EPL 0536 condition M9.1 Variation 1528551 July 2015 for the Teralba Quarry Extension, changed noise monitoring frequency from yearly to twice in the first year of monitoring for the Extension. This noise monitoring was conducted twice in August and November 2016 following the EPL Variation in July 2015. Noise monitoring for the Southern Extension Area was conducted for the Teralba Quarry in September 2014, July 2015, August 2016 and November 2016. Monitoring of the Northern Extension Area had not been conducted as no works had commenced. No noise complaints have been received by Metromix in relation to the Teralba Quarry activities. No written agreements have been requested or made with any relevant landowners in relation to noise from the Teralba Quarry operations.	Compliant Ongoing
	Location	Day 6-7am	Day 7am-6pm	Evening 6-10pm	Night 10pm-6am			
	A	38	38	37	35			
	B	42	46	36	35			
	C	42	42	35	35			
	D, E, G, H, I	35	35	35	35			
	F	37	38	38	35			
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					• SoC 2 – Operating Hours		
6.	The Proponent shall comply with the operating hours set out in <i>Table 3: Operating Hours</i>					<ul style="list-style-type: none">• SoC 2.1 to 2.6 – Operating Hours	Hours of operation of the Teralba Quarry activities are in accordance with the limits in Project Approval Schedule 3 condition 6.	Compliant
	Day	Receipt of Concrete or VENM	Loading/Dispatch of trucks	Extraction & Processing Operations				
	Mon-Fri	7am - 5pm	4am Monday to Midnight Friday	7am - 7pm				
	Saturday	7am - 2pm	Midnight Friday to 6pm Saturday	7am - 2pm				
	Sundays and Public Holidays	None	None	None				
	Operating Conditions							
7.	The Proponent shall: (a) implement best practice noise management to minimise the construction, operational and traffic noise of the project; (b) minimise the noise impacts of the project during meteorological conditions when the noise limits in this approval do not apply; (c) maintain the effectiveness of any noise suppression equipment on plant at all times and ensure defective plant is not used operationally until fully repaired; (d) regularly assess noise monitoring data and relocate, modify, and/or stop operations on site to ensure compliance with the relevant conditions of this approval; to the satisfaction of the Director-General.					<ul style="list-style-type: none">• Noise Management Plan Nov 2013	The Noise Management Plan section 8 outlines control measures to be implemented and describes the noise management practices to be implemented on the site: (a) Section 8.4 addresses noise management associated with Traffic Operations (vehicle noise emissions and beepers have been removed and vehicles and equipment fitted with low frequency 'quackers' to reduce noise emissions); (b) Section 8.5 addresses operational noise management under adverse weather conditions;	Compliant

Condition No.	Project Approval condition	Verification	Comments	Compliance																							
			(c) Section 8.3 addresses effectiveness of noise suppression equipment on plant and maintenance to ensure defective plant is not operated until it is fully repaired. (d) Section 9 outlines Evaluation of Compliance																								
	Noise Management Plan																										
8	<p>The Proponent shall prepare and implement a Noise Management Plan for the project to the satisfaction of the Director-General. This plan must:</p> <p>(a) be submitted for approval to the Director-General within 4 months of the date of this approval;</p> <p>(b) describe the measures that would be implemented to ensure:</p> <ul style="list-style-type: none">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; andcompliance with the relevant conditions of this approval; <p>(c) describe the proposed noise management system in detail; and</p> <p>(d) include a monitoring program that:</p> <ul style="list-style-type: none">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; andevaluates and reports on the effectiveness of the noise management system on site.	<ul style="list-style-type: none">Noise Management Plan, 31 Jul 2013Letter form DP&I re Comments on Noise Management Plan, 15 Aug 2013Noise Management Plan dated Nov 2013Letter from DP&I re Approval of Noise Management Plan, 16 Jan 2014	<p>A Noise Management Plan was prepared and submitted to DP&I on 31 July 2013. DP&I responded with comments on 15 August 2013 and the Noise Management Plan was revised and re-submitted for approval.</p> <p>(a) The Noise Management Plan was submitted to DP&I on 31 July 2013 and the revised Plan approved on 16 January 2014;</p> <p>(b) Noise Management Plan section 8 describes Control Measures for noise from the quarry and transport operations, and management under adverse weather conditions. Section 9 describes Noise Monitoring Protocol and Evaluation of Compliance.</p> <p>(c) Noise Management Plan describes the overall noise management system</p> <p>(d) Noise Management Plan Section 9 describes Noise Monitoring Protocol and Evaluation of Compliance including of regularly evaluating the performance of the project, including individual items of plant, used or brought onto the Teralba Quarry site.</p> <p>(e) Noise Management Plan section 9 addresses Corrective and Preventative Actions and section 11 addresses Information and Communication and Incident Reporting.</p>	Compliant																							
	BLASTING																										
	Blasting Criteria																										
9.	<p>The Proponent shall ensure that the blasting on the site does not cause exceedances of the criteria in Table 4.</p> <p>Table 4: Blasting criteria</p> <table><tr><th>Location</th><th>Airblast Overpressure (dB(Lin Peak)</th><th>Ground Vibration (mm/s)</th><th>Allowable exceedance</th></tr><tr><td rowspan="2">Any residence on privately owned land, or any public infrastructure</td><td>120</td><td>10</td><td>0%</td></tr><tr><td>115</td><td>5</td><td>5% of the total blasts over a 12 mth period</td></tr></table>	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 blasts over a 12 mth period		<p>Blasts initiated at the Teralba Quarry between January 2013 and December 2016 were:</p> <table><tr><th>Year</th><th>Total No. of Blasts</th><th>No. of Exceedances of criteria</th></tr><tr><td>1 Jan 2013 to 31 Dec 2013</td><td>32</td><td>0</td></tr><tr><td>1 Jan 2014 to 31 Dec 2014</td><td>41</td><td>0</td></tr><tr><td>1 Jan 2015 to 31 Dec 2015</td><td>31</td><td>0</td></tr></table>	Year	Total No. of Blasts	No. of Exceedances of criteria	1 Jan 2013 to 31 Dec 2013	32	0	1 Jan 2014 to 31 Dec 2014	41	0	1 Jan 2015 to 31 Dec 2015	31	0	Compliant Ongoing
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 blasts over a 12 mth period																								
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1 Jan 2014 to 31 Dec 2014	41	0																									
1 Jan 2015 to 31 Dec 2015	31	0																									

Condition No.	Project Approval condition	Verification	Comments			Compliance															
	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.		1 Jan 2016to 31 Dec 2016	39	0																
			Monitoring between January 2014 and December 2016 recorded only one overpressure result greater than 115dB(L) (5 August 2014 – 119dB(L) i.e. <5% of the total number of blasts over the 12 mth period. No vibration measurements greater than 5mm/s were recorded between January 2014 and December 2016. No agreements have been required to be made with any relevant landowners in relation to blasting.																		
	Blasting Hours																				
10.	The Proponent shall 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 Director-General.	<ul style="list-style-type: none">• SoC 2.4 – Operating Hours• Blast Monitoring Results Teralba Quarry, 2013	All blasts conducted at the Teralba Quarry have occurred between 10:00am and 4:00pm.			Compliant															
	Blasting Frequency																				
11.	The Proponent shall not carry out more than 1 blast a day on site, unless an additional blast is required following a blast misfire. <i>Note: A blast may involve a number of explosions within a short period, typically less than two minutes.</i>	<ul style="list-style-type: none">• Blast Monitoring Results Teralba Quarry, 2013	Between January 2014 and December 2016 more than one blast was conducted in one day on 4 occasions: <table><tr><th>Date</th><th>Times</th><th>Location</th></tr><tr><td>24/4/14</td><td>1241 & 1300pm</td><td>Ramp #1</td></tr><tr><td>20/5/14</td><td>1432pm</td><td>Ramp #2</td></tr><tr><td>15/4/15</td><td>1350pm</td><td>Stage 1A</td></tr><tr><td>23/6/15</td><td>1300pm</td><td>Stage 1A</td></tr></table> Only one blast was conducted on any one day, with the exception of above, in accordance with Project Approval Schedule 3 condition 11.			Date	Times	Location	24/4/14	1241 & 1300pm	Ramp #1	20/5/14	1432pm	Ramp #2	15/4/15	1350pm	Stage 1A	23/6/15	1300pm	Stage 1A	Non-compliance (Low Risk)
Date	Times	Location																			
24/4/14	1241 & 1300pm	Ramp #1																			
20/5/14	1432pm	Ramp #2																			
15/4/15	1350pm	Stage 1A																			
23/6/15	1300pm	Stage 1A																			
	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 shall: (a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Director-General, to: <ul style="list-style-type: none">• 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		No blasting has occurred within 500m of any buildings and/or structures on privately owned land.			Not activated															

Condition No.	Project Approval condition	Verification	Comments	Compliance
	(b) give the landowner a copy of the new or updated property inspection report.			
	Property Investigations			
	<p>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 shall:</p> <p>(a) commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties, to investigate the claim; and</p> <p>(b) give the landowner a copy of the property investigation report.</p> <p>If this independent property investigation confirms the landowner's claim, and both parties agree with these findings, then the Proponent shall repair the damages to the satisfaction of the Director-General.</p> <p>If the Proponent or landowner disagrees with the findings of the independent property investigation, then either party may refer the matter to the Director-General for resolution.</p>		No blasting has occurred within 500m of any privately owned land between 2014 and 2017 and no requests for property inspections have been received.	Not activated
	Operating Conditions			
14.	<p>During blasting operations, the Proponent shall:</p> <p>(a) implement best management practice to:</p> <ul style="list-style-type: none"> • 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 <p>(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 Director-General.</p>	<ul style="list-style-type: none"> • Blast Management Plan, Sep 2013 	<p>The Blast Management Plan provides</p> <p>(a) section 7 Surrounding Residences and Potential Blast-Related Impacts and section 8 Control Measures for properties, safety, fly-rock / dust / fume management, and air-blast overpressure;</p> <p>(b) section 14 addresses Publication of Blast Information on the Metromix website and monitoring results will also be presented at CCC Meetings.</p>	Compliant
15.	<p>The Proponent shall not undertake blasting within 500 metres of:</p> <p>(a) any public road without the approval of Council; or</p> <p>(b) any land outside the site not owned by the Proponent, unless:</p> <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> o demonstrated to the satisfaction of the D-G 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 		<p>Blasting had not occurred between February 2014 and February 2017:</p> <p>(a) within 500m of a public Road; or</p> <p>(b) within 500m of any residences or any land or buildings / structures outside the Teralba Quarry site operations owned by the Metromix.</p>	Compliant

Condition No.	Project Approval condition	Verification	Comments	Compliance
	o 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.	<p>The Proponent shall prepare and implement a Blast Management Plan for the project to the satisfaction of the Director-General. This plan must:</p> <ul style="list-style-type: none"> (a) be submitted to the Director-General 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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • compliance with the applicable criteria; and • minimising fume emissions from the site. 	<ul style="list-style-type: none"> • Letter to DP&I re Submission of Blast Management Plan, 6 Sep 2013 • Blast Management Plan, Sep 2013 • Letter from DP&I re Approval of Blast Management Plan, 10 Oct 2013 	<p>A Blast Management Plan was prepared to satisfy Project Approval Schedule 3 condition 16 and submitted to DP&I on 6 September 2013. DP&I approved the Blast Management Plan on 10 October 2013:</p> <ul style="list-style-type: none"> (a) Blast Management Plan submitted to DP&I on 6 September 2013; (b) The Blast Management Plan was prepared in consultation with the Lake Macquarie City Council and residents of Teralba (Rhondra Road, Watkins Lane, Rodgers Street, Railway Street, Pitt Street, Myrtle Street and James Street); (c) Blast Management Plan section 8 presents Control Measures; (d) Blast Management Plan section 7.2.4 states <i>"there will no need to close Rhondra Road for short periods during a blast as the closest blasting location is 12 approx. 400m north of the closest blasting within the Southern Extension."</i> (e) Blast Management Plan section 7.2.5 addresses blast fume potential and management; (f) Blast Management Plan section 9 provides blast and fume monitoring and section 10 addresses Evaluation of Compliance. 	Compliant
	AIR QUALITY	• SoC 11 – Air Quality		
	Air Quality Criteria			
17.	<p>The Proponent shall 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.</p>	<ul style="list-style-type: none"> • Air Quality Management Plan, section 8, Sep 2013 	<p>The Air Quality Management Plan section 8 presents potential dust sources and key control procedures and measures adopted for the management of particulate matter emissions generated by the project, to ensure dust emissions from the Teralba Quarry activities do not exceed the criteria in Tables 5 to 7 at any residence on privately-owned land.</p>	Compliant

Condition No.	Project Approval condition	Verification	Comments	Compliance									
17.	<i>Table 5: Long-Term Impact Assessment Criteria for Particulate Matter</i>		<p>The Air Quality Management Plan, section 8, Sep 2013</p> <ul style="list-style-type: none">• SoC 11.18 - Air Quality• AS/NZS 3580• Environment Protection Licence 0536 condition P1.1	<p>The Air Quality Monitoring program to be conducted:</p> <ul style="list-style-type: none">• Five (5) dust deposition gauges are located to the east of the Teralba Quarry and on the outskirts of Teralba:<ul style="list-style-type: none">○ Hillside Crescent (established June 2004)○ Myrtle Street (established June 2004)○ Rhondda Road (established June 2004)○ Rodgers Street (established April 2011)○ Margaret Street (established April 2011)• A High Volume Air Sampler (HVAS) for PM₁₀ was installed in 2014 in accordance with the Environment Protection Licence 0536 condition P1.1 at the approved EPA Identification Point No. 3 and AS/NZS 3580.									
	<table><tr><th>Pollutant</th><th>Averaging Period</th><th>Criterion</th></tr><tr><td>Total Suspended Particulates</td><td>Annual</td><td>90 µg/m3</td></tr><tr><td>Particulate Matter <10µm (PM₁₀)</td><td>Annual</td><td>30 µg/m3</td></tr></table>	Pollutant			Averaging Period	Criterion	Total Suspended Particulates	Annual	90 µg/m3	Particulate Matter <10µm (PM ₁₀)	Annual	30 µg/m3	
	Pollutant	Averaging Period			Criterion								
	Total Suspended Particulates	Annual			90 µg/m3								
	Particulate Matter <10µm (PM ₁₀)	Annual			30 µg/m3								
	<i>Table 6: Short Term Impact Assessment Criteria for Particulate Matter</i>												
	<table><tr><th>Pollutant</th><th>Averaging Period</th><th>Criterion</th></tr><tr><td>Particulate Matter <10µm (PM₁₀)</td><td>24 hour</td><td>50 µg/m3</td></tr></table>	Pollutant			Averaging Period	Criterion	Particulate Matter <10µm (PM ₁₀)	24 hour	50 µg/m3				
	Pollutant	Averaging Period			Criterion								
	Particulate Matter <10µm (PM ₁₀)	24 hour			50 µg/m3								
	<i>Table 7: Long-Term Impact Assessment Criteria for Deposited Dust</i>												
<table><tr><th>Pollutant</th><th>Averaging Period</th><th>Max increase in Deposited Dust Level</th><th>Max Total Deposited Dust Level</th></tr><tr><td>Deposited dust</td><td>Annual</td><td>2g/m²/month</td><td>4g/m2/month</td></tr></table>	Pollutant	Averaging Period	Max increase in Deposited Dust Level	Max Total Deposited Dust Level	Deposited dust	Annual	2g/m ² /month	4g/m2/month					
Pollutant	Averaging Period	Max increase in Deposited Dust Level	Max Total Deposited Dust Level										
Deposited dust	Annual	2g/m ² /month	4g/m2/month										
<i>Notes to Tables 5-7:</i>													
<i>a - Total impact (i.e. incremental increase in concentrations due to the project plus background concentrations due to all other sources);</i>													
<i>b - Incremental impact (ie incremental increase in concentrations due to the project on its own);</i>													
<i>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.</i>													
<i>d - Excludes extraordinary events such as bushfires, prescribed burning, dust storms, sea fog, fire incidents, illegal activities or any other activity agreed by the Director-General in consultation with EPA.</i>													
	Greenhouse Gas Emissions												
18	The Proponent shall implement all reasonable and feasible measures to minimise the release of greenhouse gas emissions from the site.	<ul style="list-style-type: none">• SoC 11.16 and 11.17 – Air Quality• Air Quality Management Plan section 8.4	<p>Key actions adopted and implemented at the Teralba Quarry to minimise release of GHG are:</p> <ul style="list-style-type: none">• Minimising diesel consumption• Reducing truck idling time• Maintaining optimal tyre pressure• Optimising haul routes• Optimising electricity usage	Compliant Ongoing									
	Operating Conditions												
19	The Proponent shall: (a) implement best management practice to minimise the dust emissions of the project:	<ul style="list-style-type: none">• SoC 11 – Air Quality	(a) the measures established over many years by Metromix are consistent with best management practices and have been										



Condition No.	Project Approval condition	Verification	Comments	Compliance
	(b) 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, (c) minimise the air quality impacts of the project during adverse meteorological conditions and extraordinary events (see Note d to Tables 5-7 above); (d) minimise any visible off-site air pollution; and (e) minimise surface disturbance of the site, other than as permitted under this approval.	<ul style="list-style-type: none"> Air Quality Management Plan, Sep 2013 	adopted in the Air Quality Management Plan. These measures have been effective in controlling dust from the quarry activities. Some additional controls (b) If monitoring results approach the criteria identified in Project Approval Schedule 3 condition 17, the Quarry Manager or Quarry Supervisor will review: i) the meteorological data for the corresponding period; ii) the locations and duration of activities on site during the corresponding period; and iii) data on activities at the nearby asphalt plant. If Teralba Quarry is determined to be the source of the elevated dust levels, the Quarry Manager will initiate corrective and preventative actions. Metromix will report the event to the EPA in accordance with the Pollution Incident Response Management Plan as soon as practicable after the incident and a report would be submitted to the DP&I and EPA within 7 days of the exceedance in accordance with Project Approval Schedule 5 condition 7. (c) An automated meteorological station is installed on the Teralba Quarry site. The station retrieves data from the logger and transmits it directly to a computer at the quarry site office. (d) During periods of high wind speeds Teralba Quarry activities capable of generating dust are curtailed in the higher exposed areas. Water is applied to internal roads and blasts are not scheduled or initiated. (e) When areas within the Quarry Site are no longer required for operational purposes, they are rehabilitated in accordance with the Landscape Management Plan.	Compliant
	Air Quality Management Plan			
20	The Proponent shall prepare and implement an Air Quality Management Plan for the project to the satisfaction of the Director-General. This plan must: (a) be prepared in consultation with Council, and submitted for approval to the Director-General within 4 months of the date of this approval; (b) describes the measures that would be implemented to ensure:	<ul style="list-style-type: none"> Letter from DP&I re Comments on Air Quality Management Plan, 15 Aug 2013 Letter to DP&I re Air Quality Management Plan, 6 Sep 2013 	The Air Quality Management Plan was prepared to satisfy this Project Approval condition and was approved by DP&I on 10 October 2013: (a) The Air Quality Management Plan was prepared in consultation with Lake Macquarie City Council and a draft copy of the Plan provided to Council for review and comment on 26 June 2013. Informal discussions were	Compliant



Condition No.	Project Approval condition	Verification	Comments	Compliance
	<ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Air Quality Management Plan, Sep 2013 Letter from DP&I re Approval of Air Quality Management Plan, 10 Oct 2013 	also held with the EPA, particularly with respect to the proposed air quality monitoring program and locations and type of air quality monitoring. (b) measures implemented are: <ul style="list-style-type: none"> consistent with best management practices effective in controlling dust from the quarry activities; during periods of high wind speeds (typically from the western quadrant): Teralba Quarry activities capable of generating dust are curtailed in the higher exposed areas. monitoring results are assessed by the Quarry Manager or Quarry Supervisor for compliance with relevant conditions; (c) the Air Quality Management Plan presents the air quality management system for the Teralba Quarry; (d) sections 9, 10 and 11 address air quality monitoring and compliance	
	METEOROLOGICAL MONITORING			
21	For the life of the project, the Proponent shall ensure that there is a suitable meteorological station operating in the vicinity of the site that: <ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Environment Protection Licence No. 536, draft Variation dated 7 Feb 2014 	EPL 0536 condition M5 describes the requirements for a meteorological station to be available on the Teralba Quarry site. A meteorological monitoring station is located in a satisfactory location on the Northern Extension Area and measures wind speed and direction, temperature, rainfall and relative humidity. The station results are relayed to the computer system in the Teralba Quarry office and is available for on site management of activities.	Compliant
	SOIL & WATER	<ul style="list-style-type: none"> SoC 6 – Groundwater SoC 7 – Surface Water SoC 14 - Soils 		
	<i>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</i>		Metromix holds a Water Access Licence No. 08L173206 for 1407ML/a for water pumped from Dam A.	Compliant
	Water Supply			
22	The Proponent shall 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.		Sufficient water supply for the Teralba Quarry activities is available from the Mine Adit of the historic underground coal workings.	Compliant
	Surface Water Discharges			


Condition No.	Project Approval condition	Verification	Comments	Compliance
23	The Proponent shall 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.	<ul style="list-style-type: none"> Environment Protection Licence No. 536 (draft Variation) 7 Feb 2014 	EPL 0536 condition P1.2, identifies EPA approved water discharge points 4 and 5 to be monitored monthly or during discharge (when water is available) for pH and total suspended solids (TSS), points 6 and 7 monitored within 8 hours of commencement of any discharge for pH, EC and TSS, and volume discharged from point 7.	Compliant
	On-Site Sewage Management			
24	The Proponent shall manage on-site sewage to the satisfaction of Council and the EPA.		Sewage is treated in an onsite sewerage / wastewater treatment plant that has no discharge to the environment.	Compliant
	Storage of Chemicals & Petroleum Products			
25	The Proponent shall 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) shall be designed in accordance with: <ul style="list-style-type: none"> the requirements of relevant Australian Standards; and DECC's Storing and Handling Liquids: Environmental Protection – Participants Manual. 	<ul style="list-style-type: none"> Soc 7.12 – Surface Water 	Petroleum products on site (diesel and oils) are held in appropriately bunded areas with impervious flooring and sufficient capacity to contain 110% of the largest container stored within the bund (in accordance with AS1940-2004 and the DECC <i>Storing and Handling Liquids: Environmental Protection Manual</i>). Waste oil is placed in the covered bunded waste oil tank and the waste oil collected for recycling by Trans-Pacific.	Compliant
	Water Management Plan			
26	The Proponent shall prepare and implement a Water Management Plan for the project to the satisfaction of the Director-General. 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 Director-General, and be submitted to the Director-General 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:	<ul style="list-style-type: none"> Water Management Plan, Dec 2016 Letter from DP&I re Comments on Water Management Plan, 16 Jan 2014 Letter from DP&E re Approval of Water Management Plan, 20 Dec 2016 	The Water Management Plan was prepared in consultation with the Lake Macquarie City Council and the NSW Office of Water (NOW) / DPI-Water. Comments on the Water Management Plan were received from DP&I on 16 January 2014. The Water Management Plan was revised and updated information from EPL 0536 Variation 1529551 (dated 3 July 2015) included. The Water Management Plan Revision 3 was resubmitted to DP&E and approved on 20 December 2016.	Compliant
26(a)	Site Water Balance that: <ul style="list-style-type: none"> includes details of: <ul style="list-style-type: none"> 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; 	<ul style="list-style-type: none"> Water Management Plan, section 7.4, Dec 2016 Specialist Consultant Studies Compendium for the Teralba Quarry Extensions EA, Jun 2012 Part 3 – Surface Water Assessment –BMT-WBM Pty Ltd (2011) NOW Licence No. 20BL173206, 2013 Annual Review 2014 Annual Review 	(a) A site water balance was prepared as part of the Environmental Assessment for the project: <ul style="list-style-type: none"> Water Management Plan section 7.3.1 addresses Water Supply - potable water is sourced directly from the local water mains and non-potable water is extracted under NOW Licence No. 20BL173206 from the Mine Adit Dam A; Flow monitoring (from the installed water flow meters) and water quality data collected is reported as part of the EPL Annual Return 	Compliant

Condition No.	Project Approval condition	Verification	Comments	Compliance
		<ul style="list-style-type: none"> 2015 Annual Review 	and the Project Approval Schedule 5 condition 3 Annual Reviews; <ul style="list-style-type: none"> Water is recirculated throughout the operation of the processing plant, with waste water or slurry pumped to the silt cells for settlement. 	
26(b)	Surface Water Management Plan, that includes: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> clean water diversion systems; erosion and sediment controls; and water storages; design objectives and performance criteria for proposed: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> SoC 7 Surface Water Water Management Plan, section 7.4, Dec 2016 Specialist Consultant Studies Compendium for the Teralba Quarry Extensions EA, Jun 2012 Part 3 – Surface Water Assessment –BMT-WBM Pty Ltd (2011) 2013 Annual Review 2014 Annual Review 2015 Annual Review 	(b) Surface Water Management prepared as section 7 of the Water Management Plan: <ul style="list-style-type: none"> Section 7.1.5 addresses Existing Surface Water Quality Section 7.1 addresses Site Water Management and section 8 addresses clean water diversion and erosion and sediment controls Section 8 addresses design objectives and performance criteria for site water management; Section 9.2 addresses performance criteria, including trigger levels performance criteria, including trigger levels; Section 9.3 addresses monitoring locations and frequency; Section 11 outlines corrective and preventative actions to respond to any exceedances of the performance criteria; Section 7.3 provides a review of the dirty water management system, and section 8 outlines options to improve storage and retention times in accordance with The Blue Book 	Compliant
26(c)	Groundwater Management Plan, that includes: <ul style="list-style-type: none"> 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: 	<ul style="list-style-type: none"> Water Management Plan, section 7.4, Dec 2016 SoC 6 - Groundwater Specialist Consultant Studies Compendium for the Teralba Quarry Extensions 	(c) Groundwater Management has been addressed in Water Management Plan section 7.2: <ul style="list-style-type: none"> Sections 7.2.1 to 7.2.3 outline baseline groundwater yield and quality in the area of the Teralba Quarry; 	Compliant

Condition No.	Project Approval condition	Verification	Comments	Compliance
	<ul style="list-style-type: none"> surface water inflows into the groundwater system beneath the site; the impacts of the project on: <ul style="list-style-type: none"> 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; <p><i>Note: The Director-General may require the Proponent to implement upgrades and other changes identified under paragraph (b), in accordance with condition 4 of schedule 2.</i></p>	EA, Jun 2012 Part 2 – Groundwater Assessment – RCA Australia (2011) • NOW Licence No. 20BL173206, • 2013 Annual Review • 2014 Annual Review • 2015 Annual Review	<ul style="list-style-type: none"> Section 9.3 outlines the monitoring program for surface water inflows, local seam aquifers, groundwater bores and groundwater dependent ecosystems; Section 7.2 addresses seepage/leachate from water storages or backfilled voids (including historical coal workings) on site Section 11 outlines corrective and preventative actions to respond to any exceedances of the groundwater assessment criteria; 	
	VISUAL	• SoC 12 - Visibility		
	Protection of Ridgelines			
27	The Proponent shall 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.	• SoC 12.1 - Visibility	The Teralba Quarry plan for the clearance of ridgeline vegetation is cognisant of the visual impact associated with the ridgelines and progressive minimal clearing is practised in relation to the extension works to reduce potential impact.	Compliant Ongoing
28	The Proponent shall ensure that the: <ul style="list-style-type: none"> (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 Director-General. 	• SoC 12.1 and 12.4 - Visibility	<ul style="list-style-type: none"> (a) Works on the eastern faces of the Southern Extension Area commenced in December 2013 and extraction of resource in Stage 1A had occurred between February 2014 and February 2017. Commencement of extraction from Stage 1B was observed at the date of this audit. (b) Regeneration of native endemic understorey and tree canopy will commence on the western benches of Stage 1A and 1B of the Southern Extension when the recovery of resource is complete from the upper face areas. 	Compliant Ongoing
	Operating Conditions			
29	The Proponent shall <ul style="list-style-type: none"> (a) implement all reasonable and feasible measures to minimise the visual impacts and any offsite 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. 	• SoC 12 - Visibility	<ul style="list-style-type: none"> (a) Visual impacts of the quarry operations have been minimised for the Southern Extension Area works and there are no offsite lighting impacts from the current works; (b) Revegetation of the completed areas of the Teralba Quarry appear consistent with the surrounding vegetation communities and tree canopy. 	Compliant Ongoing

Condition No.	Project Approval condition	Verification	Comments	Compliance
	Advertising Signage			
30	The Proponent shall not erect or display any advertising structure(s) or signs on the site without the written approval of the Director-General. <i>Note: This condition does not require approval for any business identification, traffic management, and/or safety or environmental signs.</i>		No advertising signage or structures have been erected on the Teralba Quarry site Signs erected at the entrance to the Teralba Quarry site are only related to the company identification, safety and environment requirements and traffic signs.	Compliant
	TRANSPORT	• SoC 7 – Traffic and Transport		
	Intersection Investigation and Wheel Wash			
31	Within 6 months of the date of this approval the Proponent shall: (a) commission a suitably qualified and experienced person endorsed by the Director-General 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 Director-General 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.	<ul style="list-style-type: none"> Project Approval 10_0183, granted 22 Feb 2013 Guide to Road Safety Part 6: Road Safety Audit, Austroads, 2009 Guidelines for Road Safety Audit Practices, RMS, 2011 Letter to DP&I re Road Safety Audit Report, 14 Aug 2013 	(a) GTA Consultants (Ken Hollyoak - suitably qualified and experienced traffic consultant) undertook a road safety audit for the intersection of York Street and Anzac Parade Teralba in consultation with Lake Macquarie City Council; (b) The Road Safety Audit Report and consequent letters were submitted to the Director-General; (c) The road safety audit identified primary issues that would be addressed by Council as part of their ongoing road maintenance works.	Compliant
32	The Proponent shall 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 Director-General.		SoC 9.3 – Traffic and Transport Wheel wash facilities were installed at the quarry exits to Railway Street and Rhondda Road to ensure truck tyres and under body are cleaned of mud, dirt and dust prior to exiting the site, to avoid tracking dirt onto public roads	Compliant
	Operating Conditions			
33	The Proponent shall construct the tunnel and conveyor under Rhondda Road to the satisfaction of Council.		The commencement of quarrying of the Northern Extension, that may require the construction of a tunnel and conveyor under Rhondda Road, had not commenced at the date of this audit (February 2017).	Not applicable
34	Within 6 months of the date of this approval, the Proponent shall cease transporting quarry material by truck between the quarry pits.		Transport of quarry materials between the Northern and Southern Area pits had not occurred between February 2014 and February 2017 (No quarrying	Compliant

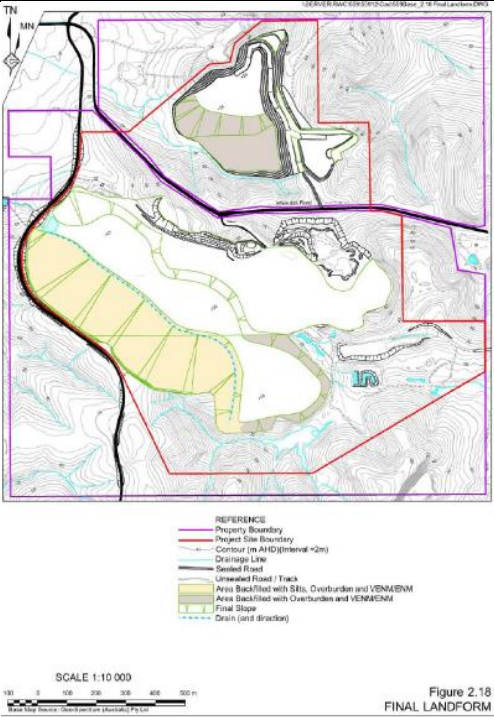

Condition No.	Project Approval condition	Verification	Comments	Compliance
			had occurred from the Mid-Pit quarry since 22 August 2013).	
35	The Proponent may only transport quarry products from the site on the designated Haulage Routes (see Appendix 4), except in circumstances where the final destination of the quarry products can only be accessed by other roads.	<ul style="list-style-type: none"> Traffic Management Plan, Oct 2013 Drivers Code of Conduct, Oct 2013 	Transport of products from the Teralba Quarry site only occurs on the designated Haulage Routes identified in the Project Approval in Appendix 4 and the Traffic Management Plan and Drivers Code of Conduct.	Compliant
36	The Proponent shall ensure that all heavy vehicles: <ul style="list-style-type: none"> (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. 		<ul style="list-style-type: none"> (a) On-site speed is limited to 30kph as noted by signage; (b) Exit speed to Railway Street is limited to 20kph; (c) all trucks leaving the Teralba Quarry site were observed to have their loads covered. 	Compliant
37	During the AM peak period and PM peak period, the Proponent shall 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 Director-General.	<ul style="list-style-type: none"> Traffic Management Plan, Oct 2013 Teralba Quarry Truck Movements 	Hourly truck rates are managed to minimise project-related traffic delays and congestion at the intersection of Toronto and Five Islands Roads and along York Street.	Compliant
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 6pm and 6am.		All trucks owned by Metromix, and its approved contractors and fitted with airbag suspension.	Compliant
	Maintenance			
39	The Proponent shall 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 Director-General.		The on-site road that connects to Railway Street (from the wheel wash to the exit gate) is paved and was observed to be well maintained.	Compliant Ongoing
	Monitoring of Product Transport			
40	The Proponent shall: <ul style="list-style-type: none"> (a) keep accurate records of: <ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Traffic Management Plan, Oct 2013 Teralba Quarry Truck Movements www.metromix.com.au 	<ul style="list-style-type: none"> (a) Quarry product records are maintained on Monthly Transport Tonnages Registers. The total extraction for the year is reported to DRE and included in the Annual Review; and All laden truck movements from the site are recorded hourly, daily, weekly, monthly and annually; (b) Truck movements recorded are placed on the Metromix website at least quarterly. 	Compliant
	Road Signage			

Condition No.	Project Approval condition	Verification	Comments	Compliance
41	Within 6 months of the date of this approval the Proponent shall install flashing lights within Northville Drive for the 40 km school zones outside of Barnsley and Edgeworth Heights Public Schools, to the satisfaction of RMS.	<ul style="list-style-type: none"> Letter from DP&I re Project Approval Schedule 3 condition 41, 15 Aug 2013 	RMS did not support the installation of flashing lights at school zones by parties other than RMS. DP&I accepted that Metromix did not have to implement this condition.	Not applicable
42	Prior to carrying out quarrying operations under this approval, the Proponent shall install "Trucks entering" warning signs 200 metres either side of the quarry entrances on public roads.		"Trucks entering" warning signs have been erected 200 metres either side of the quarry entrance to Rhonnda Road.	Compliant
	Parking			
43	The Proponent shall provide sufficient parking on-site for all project-related traffic in accordance with Council's parking codes and in consultation with Council.		No Council Parking Code was available for the Teralba Quarry site. Metromix have adequate parking on site for all project-related vehicles.	Compliant
	Transport Management Plan			
44	<p>The Proponent shall prepare and implement a Transport Management Plan for the project to the Director-General. This plan must:</p> <ul style="list-style-type: none"> (a) be prepared by a suitably qualified traffic consultant in consultation with the RMS and Council, and submitted to the Director-General 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: <ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Transport Management Plan, Oct 2013 Drivers Code of Conduct, Oct 2013 	<p>The Traffic Management Plan to satisfy Project Approval 10_0183 Schedule 3 condition 44 was approved by DP&I on 10 October 2013:</p> <ul style="list-style-type: none"> (a) The Traffic Management Plan was prepared by GTA Consultants in conjunction with R W Corkery & Co, in consultation with the RMS and Lake Macquarie City Council; (b) Traffic Management Plan Appendix 1 provides the Drivers Code of Conduct; (c) Traffic Management Plan section 6.2 describes Competence Training and Awareness that includes site traffic rules, safe site delivery, Drivers Code of Conduct, maximum hourly despatch rates and operation and maintenance of wheel washes. (d) Traffic Management Plan section 8 describes Performance and Monitoring of the truck and transport management plan requirements. 	Compliant
	BUSHFIRE MANAGEMENT	<ul style="list-style-type: none"> SoC 15 – Bushfire Hazard 		
45	<p>The Proponent shall:</p> <ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Bushfire Management Plan, Feb 2014 	A Bushfire Management Plan for the Teralba Quarry was prepared in February 2014 to address the requirements of Project Approval 10_0183 Schedule 3 condition 45 and approved by the DP&I. The Bushfire Management was reviewed with the Teralba Fire Service and West Wallsend Rural Fire Service in 2016 following a bushfire that occurred in	Compliant

Condition No.	Project Approval condition	Verification	Comments	Compliance
			December 2015 on the northern side of Rhonnda Road. (a) Section 7.3 addresses management of bushfire hazard and active bushfires; and (b) Section 7.4 describes agency co-operation.	
	WASTE	<ul style="list-style-type: none"> • SoC 3 – Waste Management 		
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.	<ul style="list-style-type: none"> • Waste Management Plan, Oct 2013 	A 'Resource recovery exemption' under the <i>Protection of the Environment Operations Act 1997</i> would be obtained if VENM / ENM was to be imported to the Teralba Quarry site.	Not activated
47	The Proponent shall: (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 Director-General.	<ul style="list-style-type: none"> • Waste Management Plan, Oct 2013 	The waste generated by the Teralba Quarry project activities is appropriately stored and handled on site. All waste is segregated into separate bins, containers or tanks for collection, recycling/disposal by Trans-Pacific Waste contractors, and One Steel Metal Recycling Services.	Compliant
48	The Proponent shall prepare and implement a Waste Management Plan for the project to the satisfaction of the Director-General. This plan must: (a) be prepared in consultation with DRE and Council, and submitted to the Director-General 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; (e) include a program to monitor the effectiveness of these measures.	<ul style="list-style-type: none"> • Waste Management Plan, Oct 2013 • SoC - Waste Management 3.1 to 3.4 	The Waste Management Plan was prepared to satisfy Project Approval 10_0183 Schedule 3 condition 48 and approved by DP&I on 10 Oct 2013: (a) DRE and Council were consulted during preparation of the Waste Management Plan; (b) Waste streams from the Teralba Quarry are identified in Table 7.1 of the Waste Management Plan; (c) Section 8 of the Waste Management Plan discusses estimated waste volumes that would be generated by the project; (d) Section 9 of the Waste Management Plan describes the waste control measures and management strategies; (e) Section 10 describes monitoring and evaluation of compliance.	Compliant
	ABORIGINAL HERITAGE	<ul style="list-style-type: none"> • SoC 13 - Heritage 		
	Heritage Management Plan			

Condition No.	Project Approval condition	Verification	Comments	Compliance
49	The Proponent shall prepare and implement a Heritage Management Plan for the project to the satisfaction of the Director-General. This plan must: (a) be prepared in consultation with Aboriginal stakeholders; (b) be submitted to the Director-General 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: <ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Heritage Management Plan, Aug 2013 SoC 13.5 - Heritage Letter from DP&E re Comments on the Aboriginal Heritage Management Plan, 16 January 2014 Letter from DP&E re Approval of Heritage Management Plan, 19 Sep 2014 	A Heritage Management Plan was prepared in June 2013 to satisfy the requirements of Project Approval 10_0183 Schedule 3 condition 49 and submitted to DP&I and approved on 19 September 2014. (a) Letters were sent by registered mail to Aboriginal stakeholders on 15 May 2013 requesting review of the Plan. No responses were received; (b) The draft Aboriginal Heritage Management Plan was prepared and submitted to DP&I within 6 months of the date of this approval. (It is noted that no development of the Northern Extension had occurred at the date of this audit).	Compliant
	LANDSCAPE			
	Fauna Habitat	<ul style="list-style-type: none"> SoC 8 - Terrestrial Flora and Fauna 		
50	The Proponent shall 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.	<ul style="list-style-type: none"> Environmental Assessment Specialist Consultant Studies Compendium Vol 1 Part 5 SoC 8.7 - Terrestrial Flora and Fauna Teralba Quarry – Nesting Box Installation and First Annual Inspection, Kendall and Kendall, Dec 2015 Teralba Quarry – Nesting Box Installation and First Annual Inspection, Kendall and Kendall, Dec 2016 	Nesting boxes were installed in late 2014 for three (3) fauna species potentially displaced following clearing activities (i.e. 20 boxes for microbats, 20 boxes for Little Lorikeets and 30 boxes for Sugar Gliders). Kendall and Kendall Ecological Services conduct an annual inspection and report on the use of the nest boxes.	Compliant Ongoing
51	The Proponent shall, 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.	<ul style="list-style-type: none"> Landscape Management Plan Appendix 1, Sep 2014 SoC 14.1 to 14.9 - Soils 	The Vegetation Clearing and Stripping Procedure was implemented before any clearance occurred in the Southern Extension Area Stage 1A and 1B. Clearing conducted for the commencement of the Stages 1A and 1B involved the protection of a hollow bearing tree near the boundary of the quarrying works.	Compliant Ongoing
	Biodiversity Offset Strategy	<ul style="list-style-type: none"> SoC 5 – Rehabilitation and Biodiversity Offset Management 		

Condition No.	Project Approval condition	Verification	Comments	Compliance									
52	The Proponent shall implement the Biodiversity Offset Strategy, as described in the EA, summarised in Table 8 and shown conceptually in the figure in Appendix 5, to the satisfaction of the Director-General. <i>Table 8: Biodiversity Offset Strategy</i>	<ul style="list-style-type: none">Environmental Assessment, section 2.17, Nov 2011Project Approval Appendix 5SoC 5.1 and 5.2 Rehabilitation and Biodiversity Offset Management	The development and implementation of the Biodiversity Offset Strategy for the Teralba Quarry was the subject of numerous discussions and consultation with OEH and DP&I/DP&E during the preparation of the Landscape Management Plan.	Not yet activated									
	<table><tr><th>Area</th><th>Offset Type</th><th>Minimum Size (ha)</th></tr><tr><td>Offset Area</td><td>Existing vegetation to be enhanced</td><td>142.6ha</td></tr><tr><td>Total</td><td></td><td>142.6ha</td></tr></table>				Area	Offset Type	Minimum Size (ha)	Offset Area	Existing vegetation to be enhanced	142.6ha	Total		142.6ha
	Area				Offset Type	Minimum Size (ha)							
	Offset Area				Existing vegetation to be enhanced	142.6ha							
Total		142.6ha											
	Long Term Security of Offsets												
53	By the end of June 2014, unless the Director-General agrees otherwise, the Proponent shall enter into a conservation agreement pursuant to section 69B of the National Parks and Wildlife Act 1974 for the Offset Area, which records the obligations assumed by the Proponent under the conditions of this approval in relation to this area, and shall register this agreement pursuant to section 69F of the National Parks and Wildlife Act 1974. The conservation agreement must remain in force in perpetuity. If OEH is not prepared to enter into a conservation agreement, then to satisfy this condition, the Proponent may propose another conservation measure to secure the offset for approval by the Director-General.	<ul style="list-style-type: none">SoC 5.1 and 5.2 Rehabilitation and Biodiversity Offset ManagementLetter to DP&E re Extension of Time for Conservation Agreement, 28 Jun 2016Letter from DP&E re Extension of Time for Conservation Agreement, 29 Jun 2016	The requirements of this condition were initially due by the end of June 2014. Metromix and its representatives have held numerous discussions with DP&E and OEH representatives regarding the required documentation in relation to registration of an agreement pursuant to the <i>National Parks and Wildlife Act 1974</i> section 69F. Progress has occurred through the discussions and consultation with the agencies, with extensions of time approved by the DP&E in relation to securing the offset for approval and the development and approval of a conservation agreement (or other conservation measure). This matter is still in progress. Refer to section 5.11.2 of this Audit Main Report.	In progress Administrative Non-compliance									
	Relocated Power-lines												
54	The Proponent shall ensure that any relocation of existing power-lines on-site does not cause greater than minor environmental consequences within the Offset Area.		Relocation of power lines is planned to occur as the development of the quarry progresses.	Noted									
	Rehabilitation Objectives												

Condition No.	Project Approval condition	Verification	Comments	Compliance												
55	The Proponent shall rehabilitate the site to the satisfaction of the Director-General. 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.	<ul style="list-style-type: none">• Environmental Assessment – section 2.16• Landscape Management Plan, section 5, Sep 2014• Project Approval 10_0183 - Appendix 6	 <p>Rehabilitation is being implemented progressively for areas of the Teralba Quarry site where disturbance and/or extraction have been completed.</p>	Ongoing												
	<table border="1"><thead><tr><th>Feature</th><th>Objective</th></tr></thead><tbody><tr><td>Site (as a whole)</td><td>Safe, stable & non-polluting.</td></tr><tr><td>Surface Infrastructure</td><td>To be decommissioned and removed, unless the D-G agrees otherwise.</td></tr><tr><td>Benched Quarry Walls</td><td>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</td></tr><tr><td>Quarry Pit Floor and Silt Ponds</td><td>Landscaped and revegetated utilising native flora species and felled trees from clearing. Revegetation not required for existing and proposed industrial areas.</td></tr><tr><td>Other Land Affected by the Project</td><td>Restore ecosystem function, including maintaining or establishing self-sustaining eco-systems comprised of:<ul style="list-style-type: none">• native endemic species: and• a landform consistent with Figure 8 (Appendix 6) and the surrounding environment.</td></tr></tbody></table>				Feature	Objective	Site (as a whole)	Safe, stable & non-polluting.	Surface Infrastructure	To be decommissioned and removed, unless the D-G agrees otherwise.	Benched Quarry Walls	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 Floor and Silt Ponds	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	Restore ecosystem function, including maintaining or establishing self-sustaining eco-systems comprised of: <ul style="list-style-type: none">• native endemic species: and• a landform consistent with Figure 8 (Appendix 6) and the surrounding environment.
	Feature				Objective											
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	Progressive Rehabilitation															
56	The Proponent shall rehabilitate the site progressively, that is, as soon as reasonably practicable following disturbance. All reasonable and feasible measures must be taken to minimise the total area exposed for dust generation at any time. Interim rehabilitation strategies shall be employed when areas prone to dust generation cannot yet be permanently rehabilitated.		<p>The Teralba Quarry disturbed areas are being progressively rehabilitated as demonstrated by the restored areas to the southeast of the active work areas near the underground Mine Adit.</p> <p>Rehabilitation had commenced on the areas around Silt Cell 1 and 2, at the date of this audit (February 2017).</p>	Compliant Ongoing												
	Landscape Management Plan															

Condition No.	Project Approval condition	Verification	Comments	Compliance
57	<p>The Proponent shall prepare and implement a Landscape Management Plan for the project to the satisfaction of the Director-General. This plan must:</p> <p>(a) be prepared in consultation with DRE, DPI and Council;</p> <p>(b) be submitted to the Director-General for approval within 12 months of the date of this approval;</p> <p>(c) describe how the implementation of the Biodiversity Offset Strategy would be integrated with the overall rehabilitation of the site;</p> <p>(d) describe the short, medium and long term measures that would be implemented to:</p> <ul style="list-style-type: none"> 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; <p>(e) include detailed performance and completion criteria for evaluating the performance of the Biodiversity Offset Strategy and the rehabilitation of the site, including triggering remedial action (if necessary);</p> <p>(f) include a detailed description of the measures that would be implemented over the next 3 years, including the procedures to be implemented for:</p> <ul style="list-style-type: none"> ensuring compliance with the rehabilitation objectives and progressive rehabilitation obligations in this approval; enhancing the quality of remnant vegetation and fauna habitat; restoring native endemic vegetation and fauna habitat within the biodiversity offset areas and rehabilitation area; 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 <i>Tetratheca juncea</i> population; 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; <p>g) include a program to monitor the effectiveness of these measures, and progress against the performance and completion criteria;</p>	<ul style="list-style-type: none"> Landscape Management Plan Jun 2014 Letter from DP&E re Approval of Landscape Management Plan, 19 Sep 2014 	<p>A Landscape Management Plan was prepared to satisfy Schedule 3 condition 57 and approved by the DP&E on 19 July 2014:</p> <p>(a) Following discussions held with DP&I in July 2013 consultation with Lake Macquarie City Council, Department of Primary Industries Catchment and Lands Division and Hunter-Central Rivers Catchment Management Authority, Division of Resources and Energy, and the Office of Environment and Heritage occurred for development of the Landscape Management Plan;</p> <p>(b) The Landscape Management Plan was submitted to the DP&I by 22 February 2014, comments were received from DP&I and the Final Landscape Management Plan submitted for approval in June 2014. DP&I approved the Landscape Management Plan on 19 Sep 2014;</p> <p>(c) Section 10 addresses implementation of the Biodiversity Offset Strategy, integrated with the overall rehabilitation of the site;</p> <p>(d) Section 12 describes the short, medium and long term measures for management of remnant vegetation and habitat on site, implementation of the Biodiversity Offset Strategy, and compliance with the rehabilitation objectives and progressive rehabilitation obligations;</p> <p>(e) Section 16 addresses Rehabilitation Performance and Completion Criteria;</p> <p>(f) Section 14 describes landscape management measures and procedures to be implemented over 2014 to 2017 to comply with the requirements of the Project Approval requirements;</p> <p>(g) Section 15 Monitoring and Evaluation and section 17 address Evaluation of Compliance;</p> <p>(h) Section 11 addresses Rehabilitation and Biodiversity Offset Strategy Risks;</p> <p>(i) Section 6 includes details of personnel roles and responsibilities for monitoring, reviewing, and implementing the plan.</p>	Compliant Ongoing

Condition No.	Project Approval condition	Verification	Comments	Compliance
	h) 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 i) include details of who would be responsible for monitoring, reviewing, and implementing the plan.			
	Conservation & Rehabilitation Bond			
58	<p>Within 6 months of the approval of the Landscape Management Plan, the Proponent shall lodge a Conservation and Rehabilitation Bond with the Department to ensure that the Biodiversity Offset Strategy and the rehabilitation of the site is implemented in accordance with the performance and completion criteria set out in the Landscape Management Plan. The sum of the bond shall be determined by:</p> <p>(a) calculating the cost of implementing the Biodiversity Offset Strategy over the next 3 years;</p> <p>(b) calculating the cost of rehabilitating the site, taking into account the likely surface disturbance over the next 3 years of quarrying operations; and</p> <p>(c) employing a suitably qualified quantity surveyor or other expert to verify the calculated costs, to the satisfaction of the Director-General.</p> <p>Notes:</p> <ul style="list-style-type: none"> <i>If capital and other expenditure required by the Landscape Management Plan is largely complete, the D-G may waive the requirement for lodgement of a bond in respect of the remaining expenditure.</i> <i>If the Biodiversity Offset Strategy and rehabilitation of the site area are completed to the satisfaction of the D-G, then the Director-General will release the bond. If the Biodiversity Offset Strategy and rehabilitation of the site are not completed to the satisfaction of the D-G, then the Director-General will call in all or part of the bond, and arrange for the completion of the relevant works.</i> 	<ul style="list-style-type: none"> Memo to DP&E re Teralba Quarry Biobanking Summary, from Ian Shenton Holcim, 25 Jan 2016 Email to DP&E re Rehabilitation Bond Calculation, 12 Sep 2016 Letter from DP&E re Rehabilitation Bond, 12 Sep 2016 Letter from DP&E Conservation and Rehabilitation Bond and Security Offset, 13 Jul 2016 Email to DP&E re Bank Guarantee Lodgement, 12 Oct 2016 	<p>The Landscape Management Plan was approved by DP&I on 19 September 2014.</p> <p>(a) Costs for implementing the Biodiversity Offset Strategy will be calculated when a Biodiversity Offset Conservation Agreement pursuant to the <i>National Parks and Wildlife Act 1974</i> section 69B for the Offset Area is approved and registered pursuant to section 69F of the <i>National Parks and Wildlife Act 1974</i>. (Refer to section 5.15.5 of this Independent Environmental Audit Report).</p> <p>(b) A Rehabilitation Cost Calculation for Teralba Quarry in relation to Project Approval 10_0183 Schedule 3 condition 58(b) was submitted to DP&E on 9 Sep 2016 for approval. DP&E responded on 12 September 2016 following review of the bond calculation and was satisfied that the bond satisfied the condition of approval. A bank guarantee for the Rehabilitation Bond was issued to the DP&E on 13 October 2016.</p>	<p>Administrative Non-Compliance (In progress)</p> <p>Compliant</p>
59	<p>Within 3 months of each Independent Environmental Audit (see condition 9 of schedule 5), the Proponent shall review, and if necessary revise, the sum of the Conservation and Rehabilitation Bond to the satisfaction of the Director-General. This review must consider the:</p> <p>(a) effects of inflation;</p> <p>(b) likely cost of implementing the Biodiversity Offset Strategy and rehabilitating the site (taking into account the likely surface disturbance over the next 3 years of the project); and</p> <p>(c) performance of the implementation of the Biodiversity Offset Strategy and rehabilitation of the site to date.</p>			Noted

Condition No.	Project Approval condition	Verification	Comments	Compliance
	SCHEDULE 4 ADDITIONAL PROCEDURES			
	NOTIFICATION OF LANDOWNERS			
1	As soon as practicable after obtaining monitoring results showing an: (a) exceedance of any relevant criteria in schedule 3, the Proponent shall 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 shall 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.			Not activated
	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 Director-General in writing for an independent review of the impacts of the project on his/her land. If the Director-General is satisfied that an independent review is warranted, then within 2 months of the Director-General's decision the Proponent shall: (a) commission a suitably qualified, experienced and independent expert, whose appointment has been approved by the Director-General, to: <ul style="list-style-type: none"> 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 Director-General and landowner a copy of the independent review.			Not activated
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 Director-General. If the independent review determines that the project is not complying with the relevant criteria in schedule 3, then the Proponent shall: (a) implement all reasonable and feasible mitigation measures, in consultation with the landowner and appointed independent			Noted

Condition No.	Project Approval condition	Verification	Comments	Compliance
	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 Director-General.			
	SCHEDULE 5 ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING			
	ENVIRONMENTAL MANAGEMENT			
	Environmental Management Strategy			
1	<p>The Proponent shall prepare and implement an Environmental Management Strategy for the project to the satisfaction of the Director-General. This strategy must:</p> <p>(a) be submitted to the Director-General for approval with 6 months of the date of this approval;</p> <p>(b) provide the strategic framework for environmental management of the project;</p> <p>(c) identify the statutory approvals that apply to the project;</p> <p>(d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project;</p> <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; and 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. 	<ul style="list-style-type: none"> Environmental Management Strategy, Aug 2013 Letter from DP&I re Approval of Environmental Management Strategy, 16 Jan 2014 	<p>An Environmental Management Strategy was prepared to satisfy Project Approval Schedule 5 condition 1 and approved by DP&I on 16 January 2014:</p> <p>(a) the Environmental Management Strategy was submitted to DP&I on 22 August 2013;</p> <p>(b) section 2 addresses the Strategic Framework for environmental management;</p> <p>(c) section 3 identifies Legal and Other Requirements for the Teralba Quarry;</p> <p>(d) section 14 addresses Roles and Responsibilities of all key personnel involved in the environmental management of the Teralba Quarry;</p> <p>(e) the EMS describes procedures in:</p> <ul style="list-style-type: none"> section 11 Stakeholder and Community Consultation and section 13 Publication of Information; section 9 Complaints Handling and Dispute Resolution; section 7 Corrective & Preventative Actions; section 10 Emergency Response and; <p>(f) section 3.3 identifies Environmental Management Plans required under Project Approval 10_0183, and section 5 addresses Monitoring.</p>	Compliant
	Adaptive Management			
2	<p>The Proponent shall 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.</p>		<p>The management of the operations and activities at the Teralba Quarry are regularly assessed and reviewed (e.g. for each Annual Review, monitoring data summaries and compliance etc).</p> <p>Any exceedance of assessment criteria and/or performance measures expressed in this Project Approval would be reviewed and reasonable and</p>	Noted Ongoing

Condition No.	Project Approval condition	Verification	Comments	Compliance
	Where any exceedance of these criteria and/or performance measures has occurred, the Proponent shall, at the earliest opportunity: (a) take all reasonable and feasible measures to ensure that the exceedance ceases and does not recur; (b) consider all reasonable and feasible options for remediation (where relevant) and submit a report to the Department describing those options and any preferred remediation measures or other course of action; and (c) implement remediation measures as directed by the Director-General, to the satisfaction of the Director-General.		feasible options for remedial action reviewed for implementation. Any matters identified and/or measures taken would be notified to the DP&E if a breach of the conditions of approval had occurred and the actions reported in the Annual Review	
	Management Plan Requirements			
3	<p>The Proponent shall ensure that the Management Plans required under this approval are prepared in accordance with any relevant guidelines, and include:</p> <p>(a) detailed baseline data; (b) a description of:</p> <ul style="list-style-type: none"> 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; <p>(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:</p> <ul style="list-style-type: none"> impacts and environmental performance of the project; and effectiveness of any management measures (see (c) above); <p>(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:</p> <ul style="list-style-type: none"> incidents; complaints; non-compliances with statutory requirements; and exceedances of the impact assessment criteria and/or performance criteria; and <p>(h) a protocol for periodic review of the plan.</p> <p><i>Note: The Director-General may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.</i></p>	<p>Project Approval references:</p> <ul style="list-style-type: none"> Schedule 3 condition 4 – Low Level Extraction Management Plan Schedule 3 condition 8 – Noise Management Plan Schedule 3 condition 16 - Blast Management Plan Schedule 3 condition 20 - Air Quality Management Plan Schedule 3 condition 26 - Water Management Plan Schedule 3 condition 44 - Transport Management Plan Schedule 3 condition 48 - Waste Management Plan Schedule 3 condition 49 - Heritage Management Plan Schedule 3 condition 57 - Landscape Management Plan 	<p>The Management Plans required under this Project Approval have been prepared generally in accordance with the guidelines outlined in Project Approval Schedule 5 condition 3. The requirements are addressed under the following section headings in each Plan:</p> <p>(a) baseline data - Existing Environment and Potential Impacts and Environmental Assessment 92011) Specialist Consultant Studies Compendium; (b) relevant statutory requirements - Legal and Other Requirements; relevant limits or performance measures/criteria and specific performance indicators – Existing Environment and Potential Impacts; (c) description of the management measures to be implemented – Control Measures; (d) program to monitor and report on impacts and environmental performance – Monitoring Program; and effectiveness of any management measures – Evaluation of Compliance ; (e) contingency plan to manage unpredicted impacts and their consequences – Corrective and Preventative Actions; (f) program to investigate and implement ways to improve the environmental performance (g) a protocol for managing and reporting any:</p> <ul style="list-style-type: none"> incidents – Incident Reporting; complaints – Complaints Handling and Response; non-compliances with statutory requirements – Evaluation of Compliance; 	Compliant

Condition No.	Project Approval condition	Verification	Comments	Compliance
			<ul style="list-style-type: none"> exceedances of the impact assessment criteria and/or performance criteria - Evaluation of Compliance and Corrective and Preventative Measures; (h) a protocol for periodic review of the plan – Plan Review. 	
	Annual Review			
4	<p>By the end of March each year, the Proponent shall review the environmental performance of the project to the satisfaction of the Director-General. 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>	<ul style="list-style-type: none"> 2013 Annual Review 2014 Annual Review 2015 Annual Review 	<p>The Annual Reviews of environmental performance have been prepared for the periods 1 January to 31 December each year for submission to the DP&I / DP&E.</p> <p>The Annual Reviews have been submitted to DP&E on:</p> <ul style="list-style-type: none"> 2013 Annual Review for the Teralba Quarry Extensions was submitted to DP&I in March 2014, 2014 Annual Review was submitted in March 2015, and 2015 Annual Review submitted to DP&E on 29 April 2016 (date of submission approved by DP&E). <p>a) section 2 describes development and operations (including rehabilitation) carried out in the previous calendar year, and section 6 describes the proposed development over the current calendar year;</p> <p>(b) section 3.3 provides records of complaints and section 4 provides a comprehensive review of the monitoring results and a comparison of these results over the previous calendar year, 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; 	Compliant

Condition No.	Project Approval condition	Verification	Comments	Compliance
4		•	(c) section 4 identifies any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance; (d) section 4 identifies any trends in the monitoring data over the life of the project; (e) section 4 also identifies any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and (f) section 4 outlines measures to be implemented over the current calendar year to improve the environmental performance of the project.	Compliant
	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 shall review, and if necessary revise, the strategies, plans, and programs required under this approval to the satisfaction of the Director-General. <i>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.</i>	<ul style="list-style-type: none"> Water Management Plan, Dec 2016 Low Level Extraction Plan, Sep 2016 	Management plans and other documents are routinely reviewed by Metromix in May/June each year and following other requirements of this condition. Revision where required, of the strategies, plans, and programs required under this Project Approval would occur and the revised documents submitted to the DP&E for approval.	Compliant
	Community Consultative Committee			
6	The Proponent shall establish and operate a Community Consultative Committee (CCC) for the project to the satisfaction of the Director-General. This CCC must be operated in general accordance with the Guidelines for Establishing and Operating Community Consultative Committees for Mining Projects (Department of Planning, 2007, or its latest version), and be operating within four months of the date of this approval. <i>Notes:</i> <ul style="list-style-type: none"> <i>The CCC is an advisory committee. The Department and other relevant agencies are responsible for ensuring that the Proponent complies with this approval.</i> <i>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.</i> 	<ul style="list-style-type: none"> Email from DP&I re Approval of Chairperson for the CCC, 13 Aug 2013 Letter from DP&I re CCC Commencement, 15 Aug 2013 CCC Meeting Minutes: <ul style="list-style-type: none"> 2 Sep 2013 27 Nov 2013 30 Apr 2014 17 Sep 2014 15 Apr 2015 21 Oct 2015 20 Apr 2016 9 Nov 2016 	The establishment of the Community Consultative Committee (CCC) occurred later than four months after the date of this approval. Metromix experienced difficulties in attracting community representation onto the CCC as evidenced from the consultation records. The first meeting of CCC was held on 2 September 2013. Current CCC members are: Independent Chair Margaret McDonald-Hill Community Members – Colin Wright Community Representative Richard Metcalf (Teralba Public School) Lake Macquarie City Council – Councillor Wendy Harrison Metromix – William Sanderson, Robert McCabe, Dan Bolton Independent Minute Taker –	Compliant

Condition No.	Project Approval condition	Verification	Comments	Compliance
			Leslie Crawley	
	REPORTING			
	Incident Reporting			
7	The Proponent shall notify, at the earliest opportunity, the Director-General 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 Director-General 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 Director-General and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.		No reportable incidents were notified between February 2014 and February 2017. A discharge from Mine Adit Dam A occurred in January 2016 following a heavy rainfall event, when 2000 kilolitres of water flowed from the disused coal mine adit, not from stormwater retention dams on the Teralba Quarry site. Metromix reported this occurrence to the EPA and it was accepted that Metromix was not able to stop this discharge during the high rainfall event as the source was not from the quarry activities.	Not triggered
	Regular Reporting			
8	The Proponent shall provide regular reporting on 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.	<ul style="list-style-type: none"> www.metromix.com.au/ 	Monitoring results, complaints and Annual Reviews are available on the Metromix website with the website being updated at least each quarter.	Compliant
	INDEPENDENT ENVIRONMENTAL AUDIT			
9	Within a year of the commencement of development on site under this approval, and every 3 years thereafter, unless the Director-General directs otherwise, the Proponent shall 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 Director-General;	<ul style="list-style-type: none"> Letter from DP&I re Approval of Independent Auditor, 14 Jan 2014 Independent Environmental Audit, February 2014 	The first Independent Environmental Audit was conducted within a year of the commencement of development under this approval. This second Independent Environmental Audit was conducted within 3 years of the commencement of development under this approval.	Compliant

Condition No.	Project Approval condition	Verification	Comments	Compliance
	(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. <i>Note: This audit team must be led by a suitably qualified auditor and include experts in any fields specified by the Director-General.</i>	<ul style="list-style-type: none"> Letter from DP&E re Approval of Independent Auditor, 15 Dec 2016 	(a) This second Independent Environmental Audit was conducted by Trevor Brown endorsed by DP&E on 15 December 2016. (b) Consultation occurred with relevant agencies (DP&E, RMS, Lake Macquarie City Council, and DPI-Water); (c) Section 4 of this audit report assesses environmental performance of the project and compliance with the relevant requirements in this approval and EPL 0536 is addressed in section 4 and Attachments to this audit; (d) section 4 of this audit report reviews the adequacy of the approved Environmental Management Strategy, Environmental Management Plans and programs; (e) section 5 of this report provides any recommended measures or actions to improve the environmental performance of the project (if required), and/or any assessment, plan or program required under the approvals.	
10	Within 3 months of commissioning this audit, or as otherwise agreed by the Director-General, the Proponent shall submit a copy of the audit report to the Director-General, together with its response to any recommendations contained in the audit report.			Noted
	ACCESS TO INFORMATION			
11	Within 4 months of the date of this approval, the Proponent shall: (a) make the following information publicly available on its website: <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; 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 Director-General; and (b) keep this information up-to-date, to the satisfaction of the Director-General.	<ul style="list-style-type: none"> www.metromix.com.au/ 	The following information publicly available on its website: <ul style="list-style-type: none"> Environmental Protection License 536 Teralba Quarry Project Approval 10_0183 Response to EA Submissions Environmental Assessment, Nov 2011 Specialist Consultant Studies Compendium Volume 1 and Volume 2, Nov 2011 Community Consultative Committee (CCC) Minutes Environmental Management Strategy Air Quality Blast Management Heritage Management Plan Noise Management Transport Waste Management Water Management Community Complaints Non-Compliances 	Compliant Ongoing



Condition No.	Project Approval condition	Verification	Comments	Compliance
			<ul style="list-style-type: none">Monitoring results	

Attachment B - Statements of Commitment

Attachment B - Statements of Commitment

(Environmental Assessment section 6 - Statements of Commitment, November 2011)


SoC No.	Action	Timing	Verification	Comment	Compliance
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.	<ul style="list-style-type: none">Boundary Survey Plan Southern Extension, Moutrie Survey, Jun 2013Compendium of Documents for DP&I, Sep 2013	<u>Refer to Project Approval Schedule 3 condition 1</u> The boundaries of the approved limits of the Teralba Quarry lease activities have been marked with coloured poles for the various areas: <ul style="list-style-type: none">White poles - Stage 1A,Yellow poles – quarry extraction limitsBlue poles - Council Pugmill AreaGreen poles – Downer The posts specifically identify each of the active areas of works within the Teralba Quarry lease boundaries.	Compliant
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		<u>See Project Approval Schedule 3 condition 6</u> Quarry extraction and processing activities south of Rhondda Road occur between 6:00am and 8:00pm on Monday to Fridays and 6:00am to 2:00pm on Saturdays.	Compliant
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		Quarry operations north of Rhondda Road ceased in August 2013 and had not recommenced at the date of this audit (February 2017).	Not activated
2.3	Undertake product transportation activities 24hrs/day between 4:00am Monday to 6:00pm Saturday.	During operations	<ul style="list-style-type: none">Truck Movement Records Aug-Dec 2013	<u>See Project Approval Schedule 2 condition 9</u> Product transportation activities from the Teralba Quarry occur between 6:00am and 6:00pm Monday to Saturday in accordance with the Project Approval Schedule 2 condition 9.	Compliant
2.4	Undertake all blasts between 10:00am and 4:00pm Monday to Friday.	During operations	<ul style="list-style-type: none">Blast Monitoring Records 2013	Blasts are only conducted between 10:00am and 4:00pm Monday to Friday.	Compliant
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		Activities undertaken outside of the Hours of Work required under the Project Approval are not associated with resource extraction or transport of product.	Compliant
2.6	The nominated operating hours above in Action 2.3 do not apply to the delivery of	Details of the circumstances			Noted

SoC No.	Action	Timing	Verification	Comment	Compliance
	material if that material is requested by police, any emergency service or Council.	of these requests would be provided to the D-G and EPA within a reasonable period of the request.			
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	<ul style="list-style-type: none">Waste Management Plan, Appendix 1 Waste Management Matrix, Oct 2013	<u>See Project Approval Schedule 3 condition 47 and 48</u> The waste generated at the Teralba Quarry is appropriately stored and handled on site with all waste segregated for collection, recycling/disposal by Trans-Pacific Waste contractors, and One Steel Metal Recycling Services.  Waste oil and grease bunded storage area.	Compliant
3.2	Segregate waste into recyclables and non-recyclable materials for removal by a licensed Contractor.	Ongoing	<ul style="list-style-type: none">Waste Management Plan, section 9.7, Oct 2013		Compliant
	Minimisation of the potential risk of environmental impact due to waste creation, storage and/or disposal.		<ul style="list-style-type: none">Waste Management Plan, section 9.6, Oct 2013		Compliant
3.3	Organise the regular collection of industrial wastes.	Monthly or as needs basis	<ul style="list-style-type: none">Waste Management Plan Oct 2013		Compliant
3.4	Store waste oils and greases within the workshop area in either self-bunding containers or within suitably contained areas.	Ongoing	<ul style="list-style-type: none">Waste Management Plan, section 9.6, Oct 2013		Compliant
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		Extraction works had not commenced in the Northern Extension Area at the date of this audit (February 2017).	Not triggered
4.2	Maintain lockable gates at all entry/exit points. Lock gates outside of operational hours	Ongoing		Lockable gates have been installed and maintained at the entry and exit points from the Teralba Quarry sites.	Compliant
4.3	Erect security warning signs at strategic locations around and within the Project Site. The signs would identify the presence of	Ongoing		Security warning signs are present around the site to warn of earthmoving equipment/vehicle movements,	Compliant

SoC No.	Action	Timing	Verification	Comment	Compliance
	earthmoving equipment, deep excavations and steep slopes.			deep excavations and steep slopes of quarry excavation areas.	
4.4	Continue to induct employees in safe working practices and hold regular follow-up safety meetings and reviews.	Ongoing		Induction of employees in relation to safety and safe working practices occurs for all employees with follow-up Toolbox talks and meetings conducted to maintain employee awareness.	Compliant
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		Internal roads have the boundary of the access routes marked to provide guidance to drivers in relation to safe distances from slopes adjacent to extraction areas.	Compliant
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.		<ul style="list-style-type: none">Transport Management Plan, Appendix 1, Oct 2013Drivers Code of Conduct, Oct 2013	The Traffic Management Plan (section 6.2) and Drivers Code of Conduct describes Competence Training and Awareness for all drivers / employees and covers site traffic rules, safe site delivery, Drivers Code of Conduct, maximum hourly despatch rates and operation and maintenance of wheel washes.	Compliant
5	Rehabilitation and Biodiversity Offset Management				
Create a stable final landform able to support a range of final land uses focused upon ecological corridors and ongoing industrial uses					
5.1	Retain 142.6ha of existing vegetation and remnant understorey vegetation as a legally protected biodiversity offset.	In perpetuity	<ul style="list-style-type: none">Landscape Management Plan, Figure 9.1, 19 Jul 2014	<u>See Project Approval Schedule 3 condition 52 and 53</u> The Biodiversity Offset Strategy and Landscape Management Plan identifies the area of retained vegetation to be protected, not yet approved by OEH. The Biodiversity Offset Strategy and Conservation Agreement for the protection of the biodiversity offset area in perpetuity, were still under discussion and consultation with the DP&E/OEH at the date of this audit (refer to section 4.11.2).	In progress
5.2	Maintain long term ecological values within the Final Biodiversity Offset.		<ul style="list-style-type: none">Landscape Management Plan, 19 Jul 2014		Noted
5.3	Ensure that 142.6ha of retained vegetation within the Biodiversity Offset is legally protected through a Conservation Agreement pursuant to Section 69B of the National Parks and Wildlife Act 1974.	By 30 June 2014.	<ul style="list-style-type: none">Landscape Management Plan, Figure 9.1, 19 Jul 2014		In progress
6	Groundwater				
Prevention of groundwater contamination					
6.1	Securely store all hydrocarbon products within designated and bunded areas – see Action 16.11	Ongoing		<u>See Project Approval Schedule 3 condition 25 and SoC 7.12</u> Petroleum products on site (diesel and oils) are held in appropriately bunded areas with impervious flooring and sufficient capacity to contain 110% of the largest container stored within the bund (in accordance with AS1940-2004 and the DECC Storing and Handling Liquids: Environmental Protection Manual).	Compliant
6.2	Refuel and maintain all earthmoving equipment within designated areas – see Action 16.11.	Ongoing		<u>See SoC 7.13</u> Refuelling of vehicles and equipment only occurs in designated areas and maintenance is undertaken at the site workshops.	Compliant

SoC No.	Action	Timing	Verification	Comment	Compliance
6.3	Prepare a Groundwater Management Plan, including trigger levels for actions – see Action 16.3.	Ongoing	<ul style="list-style-type: none"> Water Management Plan section 7.2, Aug 2013 	<u>See Project Approval Schedule 3 condition 26(c)</u> Groundwater Management has been prepared in Water Management Plan section 7.2 and addresses trigger levels for actions.	Compliant
6.4	Prepare a Spill Management Plan to address potentially significant hydrocarbon spills – see Action 16.11.	Ongoing	<ul style="list-style-type: none"> Water Management Plan, Aug 2013 	<u>See SoC 7.13</u> Spill Management Plan is included in the Water Management Plan section 7.3.5.	Compliant
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.	<ul style="list-style-type: none"> Water Management Plan section 9.5, Aug 2013 	<u>See EPL condition M2.3 and Project Approval Schedule 3 condition 26(b)</u> Groundwater monitoring is addressed in the Water Management Plan.	Compliant
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).	<ul style="list-style-type: none"> Water Management Plan section 9, Aug 2013 	<u>See EPL condition M2.3 and See Project Approval Schedule 3 condition 26(b)</u> Water quality monitoring of the Mine Adit Dam for pH levels, electrical conductivity, suspended solids, and oil and grease is conducted in accordance with EPL condition M2.3.	Compliant
6.7	Record flows/discharges from the Mine Adit Dam as well as quarry water usage.	Continuous	<ul style="list-style-type: none"> Water Management Plan section 9.5, Aug 2013 	<u>See EPL condition M8.1</u> Flow and discharge rate from the Mine Adit Dam A is recorded continuously by an automatic flow monitor at the discharge point.	Compliant
6.8	Review monitoring results to identify trends which may indicate impacts and allow mitigation measures to be implemented, if required.	Annually	<ul style="list-style-type: none"> 2014 Annual Review 2015 Annual Review 	All monitoring data is reviewed annually during preparation of the Annual Review Report for the Teralba Quarry.	Compliant
6.9	Ensure all monitoring data is incorporated into each Annual Environment Management Report for the Teralba Quarry.	Annually	<ul style="list-style-type: none"> 2014 Annual Review 2015 Annual Review 	All monitoring data is appended to the Annual Review Reports for the Teralba Quarry.	Compliant
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	<ul style="list-style-type: none"> "Managing Urban Stormwater, Soils and Construction, Volume 2E, Mines and Quarries", DECC, 2004 	Vegetation clearing activities are conducted in accordance with the Erosion and Sediment Control Plan and the Blue Book guidelines for erosion and sediment control.	Compliant
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	<ul style="list-style-type: none"> Water Management Plan Appendix 1 	<u>See Project Approval Schedule 3 condition 26(b)</u> The Erosion and Sediment Control Plan was prepared as part of the Water Management Plan section 3.3.4 and Appendix 1, and includes a regular monitoring program for the erosion and sediment structures.	Compliant
7.3	Incorporate an update of the current Water Management Plan (GHD, 2007) into the Soil and Water Management Plan to take into	Within 6 months of date of project approval.	<ul style="list-style-type: none"> Water Management Plan, Aug 2013 	<u>See Project Approval Schedule 3 condition 23</u> The Water Management Plan was prepared in consultation with the Lake Macquarie City Council	Compliant

SoC No.	Action	Timing	Verification	Comment	Compliance
	account the proposed Southern and Northern Extensions.		<ul style="list-style-type: none">Letter from DP&I re Water Management Plan, 16 Jan 2014Water Management Plan Revision 3, Dec 2016Letter from DP&E re Approval of Water Management Plan Revision 3, 20 Dec 2016	and the NSW Office of Water (NOW), and submitted to DP&I on 22 August 2013. The Water Management Plan Revision 3 was approved by DP&E on 20 December 2016.	
7.4	Ensuring any off-site discharge is monitored and reported in accordance with Environment Protection Licence 536.	As required	<ul style="list-style-type: none">Environment Protection Licence 0536Water Management Plan Appendix 1	<u>See Project Approval Schedule 3 condition 26(b)</u> Monitoring of the discharge from the EPA approved monitoring points has occurred and reported in accordance with EPL condition P1.2, L2.4 and M2.3.	Compliant
7.5	Conduct site clearing activities in accordance with the Blue Book (Landcom, 2004) guidelines for erosion and sediment control.	Ongoing	<ul style="list-style-type: none">"Managing Urban Stormwater, Soils and Construction, Volume 2E, Mines and Quarries", DECC, 2004	<u>See SoC 7.1</u> Vegetation clearing activities are conducted in accordance with the Erosion and Sediment Control Plan and the Blue Book guidelines for erosion and sediment control	Compliant Repeat SoC's as noted
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	<ul style="list-style-type: none">Water Management Plan Appendix 1	<u>See SoC 7.2</u> <u>See Project Approval Schedule 3 condition 26(b)</u> The Erosion and Sediment Control Plan was prepared as part of the Water Management Plan section 3.3.4 and as Appendix 1, and includes a regular monitoring program for the erosion and sediment structures.	
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	<ul style="list-style-type: none">Water Management Plan, Aug 2013Letter from DP&I re Water Management Plan, 16 Jan 2014Water Management Plan Revision 3, Dec 2016Letter from DP&E re Approval of Water Management Plan Revision 3, 20 Dec 2016	<u>See SoC 7.3</u> <u>See Project Approval Schedule 3 condition 23</u> The Water Management Plan was prepared in consultation with the Lake Macquarie City Council and the NSW Office of Water (NOW), and submitted to DP&I on 22 August 2013. The Water Management Plan Revision 3 was approved by DP&E on 20 December 2016.	
7.8	Ensuring any off-site discharge is monitored and reported in accordance with Environment Protection Licence 536.	As required	<ul style="list-style-type: none">Environment Protection Licence 0536Water Management Plan Appendix 1	<u>See SoC 7.4</u> <u>See Project Approval Schedule 3 condition 26(b)</u> Monitoring of the discharge from the EPA approved monitoring points has occurred and reported in accordance with EPL condition P1.2, L2.4 and M2.3	
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	<ul style="list-style-type: none">Erosion and Sediment Control Plan, section 3.3.3.2	<u>See Project Approval Schedule 3 condition 26(b)</u> The erosion and sediment control measures constructed on the Teralba Quarry site appear to have adequate capacity to retain and settle sediment containing runoff from the disturbed areas of the site.	Compliant


SoC No.	Action	Timing	Verification	Comment	Compliance
			<ul style="list-style-type: none">“Managing Urban Stormwater, Soils and Construction, Volume 2E, Mines and Quarries’, DECC, 2004	The calculations for the sediment dam capacities were based on the New South Wales Department of Housing and Landcom’s “Blue Book”, “Managing Urban Stormwater– Soils and Construction Volume 1 (2004) for site soils as “D/F”. Selection of the rainfall is based on “Managing Urban Stormwater, Soils and Construction, Volume 2E, Mines and Quarries’. The calculations for the sediment dam capacities are conservative and the sediment dams inspected during the site visit had their design capacity available for collection and settlement of surface runoff.	
7.10	Inspect all sediment dams and maintain as necessary (keep records).	Monthly or following rainfall exceeding 100mm in 2 days.	<ul style="list-style-type: none">Erosion and Sediment Control Plan, Table 3	Sediment dam inspections are conducted weekly and within 24hr after rainfall events >100mm/24hr.	Compliant
7.11	Remove accumulated sediment from sediment dams when storage capacity reduced by 25% - document activity in maintenance records.	Following routine inspection.	<ul style="list-style-type: none">Erosion and Sediment Control Plan, Table 3	Sediment dam inspections are conducted and sediment removed as required to ensure 70% dam capacity is available.	Compliant
Prevention of hydrocarbon contamination of water on the Project Site.					
7.12	Securely store all hydrocarbon products within designated and bunded areas.	Ongoing		Diesel storage for use on the Teralba Quarry site is adjacent to the workshop area in two (2) bunded aboveground tanks. Containers of oil/lubricants are stored in a bunded shed adjacent to the maintenance workshop.	Compliant
7.13	Refuel all earthmoving equipment within designated areas (with spill control).	Ongoing	<ul style="list-style-type: none">Water Management Plan, section 7.3.5, Dec 2016Spill Management Safe Working Method Statement	Spill management is included in the Water Management Plan section 7.3.5 and described in a Safe Working Method Statement.	Compliant
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.		A discharge point established from Dam B to the nearby watercourse, diverts surface water flows away from the Mine Adit Dam A.	Compliant
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 SoC16.7.	Within 12 months of the receipt of project approval	<ul style="list-style-type: none">Landscape Management Plan, Jun 2014	Landscape Management Plan February 2014 includes short, medium and long term vegetation management measures.	In progress

SoC No.	Action	Timing	Verification	Comment	Compliance
8.2	Clearly define the <i>Tetratheca juncea</i> sub-populations to be retained.	For the life of the Project	<ul style="list-style-type: none">Landscape Management Plan Jul 2014	Areas of <i>Tetratheca juncea</i> identified on the Teralba Quarry site have been clearly identified as NO-GO areas, to ensure protection.	Compliant Ongoing
8.3	Continue the established rehabilitation practices in appropriate areas.	Ongoing.	<ul style="list-style-type: none">Landscape Management Plan Jul 2014	Rehabilitation practices established for the Teralba Quarry site have been successful and the reuse of site topsoil and biomass continues to be applied to disturbed areas.	Compliant
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	<ul style="list-style-type: none">Landscape Management Plan Jul 2014	Topsoil removed within areas of defined populations of <i>Tetratheca juncea</i> is directly replaced in the decommissioned power line easements	Compliant Ongoing
8.5	Transfer biomass directly from vegetation clearing operations to rehabilitation areas. If it is not possible to transfer directly, stockpile material.	Ongoing	<ul style="list-style-type: none">Landscape Management Plan, Jul2014	Rehabilitation practices established for the Teralba Quarry site have been successful and the reuse of site topsoil and biomass continues to be applied to disturbed areas.	Compliant
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.	<ul style="list-style-type: none">Landscape Management Plan, Jul 2014	Weed management and removal using both manual and chemical controls have been conducted and reported annually by T.E.N.T.A.C.L.E Inc,	Compliant 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	<ul style="list-style-type: none">Landscape Management Plan, Jul 2014	<u>See Project Approval Schedule 3 condition 50</u> Nest boxes have been installed for fauna species displaced following clearing activities in accordance with the Landscape Management Plan, re 20 boxes for microbats, 20 boxes for Little Lorikeets and 30 boxes for Sugar Gliders.	Not activated
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	<ul style="list-style-type: none">Teralba Quarry Truck Movements, Jan 2014 to Dec 2016	<u>See Project Approval Schedule 2 condition 9</u> The number of laden trucks dispatched from the Teralba Quarry between February 2014 and February 2017, generally comply with the limits of hourly truck dispatch rates in Project Approval Schedule 2 condition 9.	Compliant
9.2	Ensure that no product trucks from Teralba Quarry travel eastward through Teralba between 6:00pm and 6:00am.	Ongoing	<ul style="list-style-type: none">Teralba Quarry Truck Movements, Jan 2014 to Dec 2016	<u>See Project Approval Schedule 2 condition 9</u> The small number of non-compliances with the truck dispatch time limits resulted in 2014 with one extra truck per hour being dispatched on 5 occasions.	Generally Compliant
9.3	Ensure all vehicles exiting the Project Site pass through a wheel-wash facility to remove dust generating material.	Prior to removal of product from within the extensions.	<ul style="list-style-type: none">Traffic Management Plan, Oct 2013Drivers Code of Conduct Appendix 1	All vehicles exiting the Project Site pass through a wheel-wash facility to remove dirt / dust generating material prior to the vehicle reaching the public roads.	Compliant
9.4	Provide a contribution to Lake Macquarie City Council during the ongoing life of the quarry if a suitable project approval is granted.	Quarterly		<u>See Project Approval Schedule 2 condition 17</u> Metromix consulted with the Lake Macquarie City Council and a planning agreement for the payment of	Compliant


SoC No.	Action	Timing	Verification	Comment	Compliance
				the 0.066c per tonne per kilometre (/t/km) for every tonne of quarry products transported from the site on roads for which Council is liable for road maintenance was agreed. The planning agreement was signed on 6 February 2017.	
9.5	Prepare, implement and enforce 'Drivers Code of Conduct' addressing: – 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.	Prepare within 4 months of receipt of project approval.	<ul style="list-style-type: none">Traffic Management Plan, Oct 2013Drivers Code of Conduct Appendix 1	<u>See Project Approval Schedule 3 condition 44</u> The Traffic Management Plan (section 6.2) describes Competence Training and Awareness for all drivers / employees and covers site traffic rules, safe site delivery, Drivers Code of Conduct, maximum hourly despatch rates and operation and maintenance of wheel washes. All trucks leaving the Teralba Quarry site must also have their loads covered.	Compliant
9.6	Undertake all transport activities in accordance with the project approval and Environment Protection Licence 0536.	Ongoing	<ul style="list-style-type: none">Traffic Management Plan, Oct 2013Drivers Code of Conduct Appendix 1	<u>See Project Approval Schedule 3 conditions 31 to 44</u> Transport activities are managed in accordance with the approved Traffic Management Plan.	Compliant
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.	Ongoing	<ul style="list-style-type: none">Traffic Management Plan, Oct 2013Drivers Code of Conduct Appendix 1	<u>See Project Approval Schedule 3 condition 38</u> All trucks owned by Metromix, and its approved contractors and fitted with airbag suspension.	Compliant
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	<ul style="list-style-type: none">Traffic Management Plan, Oct 2013Drivers Code of Conduct Appendix 1	All project-related vehicles are regularly serviced to ensure engine efficiencies are maintained at a standard that limits truck noise	Compliant
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.		<ul style="list-style-type: none">Transport Management Plan, Oct 2013Noise Management Plan, section 8, 16 Jan 2014	All mobile earthmoving equipment used on site are fitted with low frequency 'quacker' reversing alarms and the equipment is regularly serviced to ensure noise emissions are controlled to within acceptable levels.	Compliant
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).	When new or temporary equipment is brought to site.	<ul style="list-style-type: none">Transport Management Plan, Oct 2013Noise Management Plan, section 8, 16 Jan 2014	Independent noise monitoring of the mobile earthmoving equipment (bulldozer and haul trucks) on site has been conducted by Spectrum Acoustics, to ensure the sound power levels are acceptable.	Compliant
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	Ongoing throughout the extraction operations in the Southern Extension	<ul style="list-style-type: none">Noise Management Plan, section 8.3, 16 Jan 2014	The Southern Extension Area extraction active face is retained on the eastern side to provide a topographic barrier between operating earthmoving equipment and the residences to the east.	Compliant Ongoing

SoC No.	Action	Timing	Verification	Comment	Compliance
	barrier between operating earthmoving equipment and residences to the east.	area.			
10.4	Construct a 5m high bund on the eastern edge of the Mid Pit Extraction Area.	During Mid Pit Extraction operations.		A 5m wall on Dam K on the eastern edge of the Mid Pit Extraction Area provides a barrier for operations in the Mid-Pit Extraction Area. No Mid-Pit extraction activities have been conducted since August 2013.	Compliant
All activities are undertaken in such a manner as to reduce the noise level generated and minimise impacts on surrounding landholders and/or residents.					
10.5	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	<ul style="list-style-type: none"> • Transport Management Plan, Oct 2013 • Noise Management Plan, section 8.4, 16 Jan 2014 	<p><u>Refer to Project Approval Schedule 2 condition 18 and EPL condition O1.1</u></p> <p>The noise attributed to trucks travelling to and from the Teralba Quarry is controlled by:</p> <ul style="list-style-type: none"> • All trucks under the control of Metromix, comply at all times with the RTA's noise limits. • Only those trucks under the control of Metromix, its shareholders and approved contractors are used to transport products from the Teralba Quarry between 6:00pm and 6:00am Monday to Saturday. • All drivers sign the Drivers Code of Conduct to ensure high standard of driver performance including the need to, avoid use of exhaust brakes in built-up areas and travel at required speeds. 	Compliant
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. 	Within the first 3 months of operations in the Southern and Northern Extensions. General noise monitoring to be conducted biannually for the first year of operation in the Southern and Northern Extensions, and if complaints are filed.	<ul style="list-style-type: none"> • Noise Management Plan, section 9, 16 Jan 2014 • Noise Monitoring – Teralba Quarry, Spectrum Acoustics, 12 Sep 2014 • Noise Monitoring – Teralba Quarry, Spectrum Acoustics, 12 Jul 2015 • Noise Monitoring – Teralba Quarry, Spectrum Acoustics, 13 Sep 2016 • Noise Monitoring – Teralba Quarry, Spectrum Acoustics, 16 Dec 2015 	<p>Attended noise monitoring program is described in the Noise Management Plan section 9.</p> <p>Operations commenced within Stage 1A of the Southern Extension on 24 December 2014. No Northern Extension Area operations had occurred at the date of this audit (February 2017).</p> <p>Attended noise monitoring surveys were conducted in September 2014, July 2015, August 2016 and November 2016.</p>	Compliant Ongoing
10.7	Include a summary of all noise monitoring results in the AEMR.	Annually.	<ul style="list-style-type: none"> • Noise Management Plan, section 11.5, 16 Jan 2014 • 2013 Annual Review • 2014 Annual Review 	Noise monitoring results are included in the Annual Reviews section 4.2.	Compliant

SoC No.	Action	Timing	Verification	Comment	Compliance
			<ul style="list-style-type: none">2015 Annual Review		
10.8	Ensure all trucks departing the Project Site via the bottom gate travel at speeds <15km/hr.	Ongoing	<ul style="list-style-type: none">Transport Management Plan, Oct 2013	Trucks departing the Teralba Quarry site via the bottom gate to Railway Street are restricted to speeds of less than 15km/hr.	Compliant
10.9	Review blast designs and modify, if required.	When blasting within 500m of any residence.			Noted
11	Air Quality				
Site activities are undertaken without exceeding DECCW air quality criteria or goals.					
11.1	Minimise clearing ahead of extraction activities.	Ongoing	<ul style="list-style-type: none">Air Quality Management Plan, Oct 2013	Clearance of vegetation on the Teralba Quarry site is minimised ahead of extraction activities, to the area required for each sub-stage of the quarry development, to reduce dust generation	Compliant
11.2	Minimise the construction of minor roads and access tracks for soil stripping, extraction operations and rehabilitation.	Ongoing	<ul style="list-style-type: none">Air Quality Management Plan, Oct 2013	No construction of minor roads and access tracks occur for soil stripping, extraction operations and rehabilitation.	Compliant
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	<ul style="list-style-type: none">Air Quality Management Plan, section 8.2, Oct 2013	During periods of high wind (typically from the western quadrant) areas that may generate dust are dampened using a water truck and activities capable of generating dust may be curtailed. Additional water is applied to internal roads used for hauling primary raw feed.	Compliant
11.4	Stockpile material in sheltered locations away from sensitive receptors	Ongoing	<ul style="list-style-type: none">Air Quality Management Plan, Oct 2013	Raw materials are processed at the on-site plant and product stockpiles have been established in locations away from sensitive receptors.	Compliant
11.5	Shield and/or suppress dust on conveyors and transfer points.	Ongoing	<ul style="list-style-type: none">Air Quality Management Plan, section 6, Oct 2013	Mist sprays / dust suppression is installed on conveyors and transfer points to reduce dust dispersion.	Compliant
11.6	Limit internal road dust lift off by: – 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	<ul style="list-style-type: none">Air Quality Management Plan, Oct 2013Transport Management Plan, Oct 2013	Internal roads are maintained to reduce dust with a 30km/hr speed limit enforced on all internal roads. Spillage during truck loading and transport is minimised to ensure that product is not lost over truck sidewalls and all loads are covered during transport.	Compliant
11.7	Minimise dump heights from trucks, front-end loaders and conveyors.	Ongoing	<ul style="list-style-type: none">Air Quality Management Plan, Oct 2013	Dump heights are minimised from trucks, front-end loaders and conveyors to reduce potential for dust generation.	Compliant
11.8	Schedule blasts so that they do not occur during high wind situations	Ongoing	<ul style="list-style-type: none">Blast Management Plan, Oct 2013	Blasts are not scheduled to occur during high wind situations.	Compliant
11.9	Cease or modify activities on dry windy days when dust plumes are visible.	Ongoing.	<ul style="list-style-type: none">Air Quality Management Plan, section 8.2, Oct 2013	During periods of high wind (typically from the western quadrant) activities capable of generating dust are curtailed in the higher exposed areas.	Compliant

SoC No.	Action	Timing	Verification	Comment	Compliance
11.10	Water exposed areas not covered by gravel under dry and windy conditions when dust plumes are visible.	Ongoing.	<ul style="list-style-type: none"> Air Quality Management Plan, section 8.2, Oct 2013 	Exposed areas are watered using a water truck as required during dry periods or high wind conditions (typically from the western quadrant) when dust plumes are visible.	Compliant
11.11	Adopt a complaints management system where all complaints are dealt with through investigation and implementation of corrective treatments	Ongoing.	<ul style="list-style-type: none"> Air Quality Management Plan, Oct 2013 	The complaints management system developed for the Teralba Quarry operations is provided in the Air Quality Management Plan section 12 and outlines the process for receipt and actions to be taken in the event of an air quality complaint.	Compliant
11.12	Minimise truck queuing, unnecessary idling of trucks and unnecessary trips through logistical planning, where possible.	Ongoing.		Planning of truck loading and transport from the Teralba Quarry site reduces the queuing of trucks on site and unnecessary idling of trucks.	Compliant
11.13	Ensure the on-site wheel wash reduces mud tracking along Railway Street.	Ongoing.		Wheel wash have been installed before the exit to Railway Street from the Teralba Quarry to reduce the potential for mud tracking onto the public road.	Compliant Ongoing
11.14	Remove any mud tracking on Rhondda Road as a result of quarry movements.	Ongoing.		Wheel wash have been installed at the exit to Rhondda Road from the Teralba Quarry to reduce the potential for mud tracking onto the public road.	Compliant Ongoing
11.15	Prepare and implement a Dust Management Plan for the quarry.	Within 4 months of the receipt of project approval.		Dust management is included in the Air Quality Management Plan prepared for the Teralba Quarry in August 2013 and submitted to the DP&I.	Compliant
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.	<ul style="list-style-type: none"> Air Quality Management Plan, section 8.4, Oct 2013 	<p>Reduce Vehicle Idling Time All operators are required to operate equipment to reduce idling time by turning engines off during length periods of inactivity.</p> <p>Maintaining Optimal Tyre Pressures Each tyred vehicle will have optimal pressures identified for each tyre.</p> <p>Optimising Haul Routes Haul routes between the raw feed loading area and the processing plant are optimised and internal haul roads are progressively re-located to maintain the shortest distance and grade for haul truck travel.</p>	Ongoing
Record and monitor the local environment regarding 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.		Monthly checks are conducted for all external lighting and use of lumatrol switches that are activated by reduced levels of light. Investigation of the feasibility of introducing solar power panels on remote items of equipment to minimise the use main electrical power. Solar panels have been installed for the operation of the boom gates at the entrance / exit to Railway Street.	Compliant 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	<ul style="list-style-type: none"> Air Quality Management Plan, Oct 2013 	Dust deposition monitoring is conducted with five dust deposition gauges at locations identified in the Air Quality Management Plan section 9.2 (in accordance with Project Approval Schedule 3	Compliant Ongoing

SoC No.	Action	Timing	Verification	Comment	Compliance
				condition 20(d) and EPL 0536 condition P1.1) and meteorological parameters (in accordance with EPL 0536 condition M4) had continued at the Teralba Quarry site.	
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	Eastern vegetation maintained to provide visual screen of Southern Extension Area	The planning for the development of the Southern Extension Area has commenced and the vegetation on the eastern side of the Area has been retained to provide a visual screen.	Compliant 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).		The sequence extraction activities in the Southern Extension Area limit exposure of western faces.	Compliant Ongoing
12.3	Progressively establish vegetation on extraction faces at 50mAHD and above in western section of the Southern Extension.	Years 3 to 11 (approx).		Rehabilitation with establishment of vegetation on the extraction faces at 50mAHD and above and capping and revegetation of the silt cells in western section of the Southern Extension quarried area was commencing at the date of this audit (February 2017).	Compliant Ongoing
12.4	Advance extraction in the eastern section of the Southern Extension in strips parallel to north-south faces.	Years 22 to 30 (approx).		The eastern section of the Southern Extension Area extraction occurs in strips parallel to north-south faces.	Compliant Ongoing
12.5	Include Annual photographs of progressive rehabilitation of quarry benches in each AEMR.	Annually	<ul style="list-style-type: none"> 2014 Annual Review 2015 Annual Review 	Photographs of progressive rehabilitation are included in the Annual Reviews in the attached Rehabilitation Reports (by T.E.N.T.A.C.L.E Inc).	Compliant Ongoing
13	Heritage				
Provide appropriate protection to existing					
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	<ul style="list-style-type: none"> Aboriginal Heritage Management Plan, section 7, Aug 2013 	No cultural objects had been found prior to this audit.	Noted
13.2	Halt all works in the immediate area if human remains are found and contact NSW Police, Aboriginal community representative and OEH.	Ongoing	<ul style="list-style-type: none"> Aboriginal Heritage Management Plan, section 7, Aug 2013 	No human remains had been found prior to this audit.	Noted
13.3	Maintain reasonable efforts to avoid impacts to Aboriginal cultural heritage values at all stages of the development works	Ongoing	<ul style="list-style-type: none"> Aboriginal Heritage Management Plan, section 7, Aug 2013 		Noted
13.4	Invite representatives of Local Aboriginal stakeholders to monitor initial ground disturbance activities.	Prior to soil stripping campaigns.	<ul style="list-style-type: none"> Aboriginal Heritage Management Plan, Aug 2013 		Noted
13.5	Develop an Aboriginal Culture Educational Program for the induction of all personnel and contractors involved in the construction activities on site.	Prior to first soil stripping campaign and then ongoing.	<ul style="list-style-type: none"> Aboriginal Heritage Management Plan, sections 5 and 6, Aug 2013 	Personnel induction for the Teralba Quarry employees and contractors includes an introduction to Aboriginal heritage management issues.	Compliant Ongoing

SoC No.	Action	Timing	Verification	Comment	Compliance
	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.				
13.6	Provide appropriate protection to any non-Aboriginal artefacts identified in operational areas.			No non-Aboriginal items had been identified in operational areas prior to this audit.	Noted
13.7	Halt all works in the immediate area if any non-Aboriginal artefacts are found and notify the Heritage Council of NSW.	Ongoing			Noted
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.	During soil stripping operations	<ul style="list-style-type: none"> Landscape Management Plan section 12.2, Jun 2014 	Stripping of soil only occurs when the material is moderately moist to preserve soil structure, prevent erosion and reduce dust generation.	Compliant Ongoing
14.2	Place stripped soil directly onto reshaped overburden or dedicated stockpile area.	During soil stripping operations	<ul style="list-style-type: none"> Landscape Management Plan section 12.2.1, Jun 2014 	Topsoil and subsoil materials are stockpiled separately as low, flat mounds to a maximum height of 2m (topsoil) and 4m (subsoil) to maintain the available seed bank.	Compliant Ongoing
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	<ul style="list-style-type: none"> Landscape Management Plan section 12.2.1, Jun 2014 		Noted
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.	Immediately following stockpile construction	<ul style="list-style-type: none"> Landscape Management Plan section 12.2.1, Jun 2014 	Direct transfer of available topsoil and subsoil onto active rehabilitation areas is practised where practicable.	Compliant Ongoing
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.	During staged Rehabilitation stages.	<ul style="list-style-type: none"> Landscape Management Plan, section 12.2.1, Jun 2014 	Soil stockpiles are constructed as low, flat mounds to a maximum height of 2m (topsoil) and 4m (subsoil) to maintain the available seed bank.	Compliant Ongoing
14.6	Seed soil stockpiles with sterile cover crop (and limited fertiliser) as soon as possible where stockpiling is planned.	Immediately following stockpile construction.	<ul style="list-style-type: none"> Landscape Management Plan section 12.2.1, Jun 2014 	Locally sourced seed or tube stock is applied within the substrate on stockpiles or each bench to promote the propagation of native vegetation. The ongoing progressive rehabilitation undertaken on the Teralba Quarry site has indicated that this transfer of biomass material, accompanied by bush regeneration has been successful in the re-establishment of an open forest vegetation community with respect to both species communities and general vegetation structure.	Compliant Ongoing

SoC No.	Action	Timing	Verification	Comment	Compliance
14.7	Maintain an inventory of available soil to ensure adequate topsoil materials are available for planned rehabilitation activities.	Immediately following stockpile construction	<ul style="list-style-type: none">Landscape Management Plan, section 14.2, Jun 2014	The active quarry plan provides an inventory of available soil for planned rehabilitation activities.	Compliant Ongoing
14.8	Assess soil stockpiles for weed infestation to determine if stockpiles require weed removal applications before being re-spread onto reshaped overburden.	Ongoing	<ul style="list-style-type: none">Landscape Management Plan, section 12.2.7, Jun 2014	An annual weed and pest inspection and reporting program provides an overview of the weed and pest management measures to be implemented.	Compliant Ongoing
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.	<ul style="list-style-type: none">Landscape Management Plan section 16, Jun 2014	The evaluation of rehabilitation described in the Landscape Management Plan section 17, requires topsoil to be spread to a minimum depth range of 0.1 m (steep slopes) to 0.2m (flatter areas).	Compliant Ongoing
15	Bushfire Hazard				
Avoidance of any fires on site, particularly in native vegetation					
15.1	Adopt appropriate controls during re-fuelling.	Ongoing			
15.2	Ensure fire extinguishers are fitted to all site vehicles.	Ongoing		All site vehicles have fire extinguishers installed.	Compliant
15.3	Incorporate a Bushfire Management Plan in the overall Emergency Response Plan for the quarry.	Within 6 months of the receipt of project approval.	<ul style="list-style-type: none">Landscape Management Plan, section 12.2.9, Jun 2014	A Bushfire Management Plan (dated February 2014) has been prepared as part of the Landscape Management Plan for the Teralba Quarry.	Compliant
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	<ul style="list-style-type: none">Environmental Management Strategy, Jan 2014	<u>See Project Approval Schedule 5 condition 1</u> An Environmental Management Strategy was prepared and approved by DP&I on 16 January 2014.	Compliant
16.2	Environmental Management Plans (EMP). Focus on the next 5 years	Within 6 months of the receipt of project approval		<u>See Project Approval Schedule 5 condition 3</u> Environmental Management Plans (EMP) were prepared in 2013/2014 and submitted to the DP&I for approval.	Compliant
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	<ul style="list-style-type: none">Water Management Plan, 20 Dec 2016	<u>See Project Approval Schedule 3 condition 26</u> A Water Management Plan (including soil management) was prepared in August 2013 and approved by DP&I. A revised Water Management Plan was approved by DP&E on 20 December 2016	Compliant
16.4	Noise and Blast Management Plan. (Incorporating a blast and noise monitoring component.)	Within 4 months of the receipt of project approval.	<ul style="list-style-type: none">Noise Management Plan, Nov 2013Blast Management Plan, Oct 2013	<u>See Project Approval Schedule 3 condition 16</u> A Noise Management Plan and Blast Management Plan were prepared in Aug 2013 and submitted to the DP&I.	Compliant
16.5	Air Quality Management Plan. (Incorporating an air quality monitoring component.)	Within 4 months of receipt of project approval.	<ul style="list-style-type: none">Air Quality Management Plan, Oct 2013	<u>See Project Approval Schedule 3 condition 20</u> A Transport Management Plan was prepared in August 2013 and submitted to the DP&I.	Compliant

SoC No.	Action	Timing	Verification	Comment	Compliance
16.6	Transport Management Plan.	Within 4 months of receipt of project approval.	<ul style="list-style-type: none"> Transport Management Plan, Oct 2013 	<u>See Project Approval Schedule 3 condition 44</u> A Transport Management Plan was prepared in August 2013 and approved by DP&I on 10 October 2014.	Compliant
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.	<ul style="list-style-type: none"> Landscape Management Plan, Jun 2014 	<u>See Project Approval Schedule 3 condition 57</u> The Landscape Management Plan was prepared, submitted to DP&E and approved on 19 September 2014.	Compliant
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. Within 4 months of	<ul style="list-style-type: none"> Lower Level Extraction Plan, Nov 2016 	<u>See Project Approval Schedule 3 condition 4</u> A Lower Level Extraction Plan was prepared by Mining Operation Services (MOS) and G E Holt & Associates (GHA) for the Teralba Quarry and submitted to DP&I in February 2014. The Lower Level Extraction Plan was approved by DP&E on 23 November 2016.	Compliant
16.9	Heritage Management Plan.	Within 4 months of the receipt of project approval.	<ul style="list-style-type: none"> Aboriginal Heritage Management Plan, Aug 2013 	<u>See Project Approval Schedule 3 condition 49</u> A Heritage Management Plan was prepared in August 2013 and approved by DP&E 19 September 2014.	Compliant
16.10	Annual Environmental Management Report (AEMR).	Annually (by 31 March each year covering the previous calendar year).	<ul style="list-style-type: none"> 2013 Annual Review 2014 Annual Review 2015 Annual Review 	<u>Refer to Project Approval Schedule 5 condition 4</u> Annual Reviews (Annual Environmental Management Reports) have been prepared and submitted to DP&I/DP&E each year.	Compliant
16.11	Hydrocarbon Management Plan. (Incorporating the storage and use of fuel and spill management.)	Within 6 months of receipt of approval.	<ul style="list-style-type: none"> Water Management Plan, Dec 2016 	The management of hydrocarbon storage and use on site (including spill management) is included in the Water Management Plan section 6.2.	Compliant
16.12	Annual Production Statistics to the DTIRIS (Division of Resources and Energy).	Annually (by 31 July).		Teralba Quarry production is reported annually, and reported in the Annual Reviews.	Compliant
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.		No buildings or structures had been constructed prior to this audit so no design drawings for site structures and buildings (for submission to the Mines Subsidence Board) had been required.	Noted
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).			Not yet activated

Attachment C - Environment Protection Licence No. 0536

Notice of Variation No. 1529551 EPL 0536, dated 3 July 2015

Notice of Variation No. 1512791 EPL 0536, dated 7 February 2014

Attachment C - Environment Protection Licence No. 0536

Condition No.	EPL Condition	Verification	Comment	Compliance									
1	Administrative Conditions												
A1	What the Licence authorises and regulates												
A1.1	<div><div>This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation. Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.</div><table><tr><th>Scheduled Activity</th><th>Fee Based Activity</th><th>Scale</th></tr><tr><td>Crushing Grinding or Separating</td><td>Crushing, Grinding or Separating</td><td>>500,000 to 2,000,000 T processed</td></tr><tr><td>Extractive Industries</td><td>Land Based extractive activity</td><td>>500,000 to 2,000,000 T extracted, processed or stored</td></tr></table></div>	Scheduled Activity	Fee Based Activity	Scale	Crushing Grinding or Separating	Crushing, Grinding or Separating	>500,000 to 2,000,000 T processed	Extractive Industries	Land Based extractive activity	>500,000 to 2,000,000 T extracted, processed or stored		Teralba Quarry activities have been conducted between February 2014 and February 2017 in compliance with their scheduled activity classification, fee-based activity classification and the scale of the operation.	Compliant
Scheduled Activity	Fee Based Activity	Scale											
Crushing Grinding or Separating	Crushing, Grinding or Separating	>500,000 to 2,000,000 T processed											
Extractive Industries	Land Based extractive activity	>500,000 to 2,000,000 T extracted, processed or stored											
A2	Premises or plant to which the licence applies												
A2.1	The licence applies to the following premises: Metromix Quarries, Rhondda Road, Teralba NSW 2284 Premises boundary defines on the Plan titled "Metromix Quarry Teralba Environment Monitoring Points" prepared by Cadence Consulting Surveyors, Version C, dated 14/04/2014, excluding areas marked as shown as "LMCC Sublease" and "Downer EDI Sublease" DOC 14/53874 and DOC 15/15479.		<div>Teralba Quarry operations are conducted on Lot 1 DP 224037 and Lot 2 DP224037, Rhondda Road, Teralba NSW 2284, excluding the area marked as shown as "Downer EDI Sublease" DOC 15/15479.</div> <div>The area shown as LMCC DOC 14/53874 was transferred to Metromix in July 2015 and now operates under EPL 13015.</div>	Compliant									
A3	Information supplied to the EPA												
A3.1	<div>Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence. In this condition the reference to "the licence application" includes a reference to: a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.</div>			Noted									
2	Discharges to Air and Water and Applications to Land												
P1	Location of monitoring/discharge points and areas												

Condition No.	EPL Condition			Verification	Comment	Compliance
P1.1	The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point.			<ul style="list-style-type: none">Air Quality Management Plan, Oct 2013Air Quality Monitoring Results 2014 to 2017AS/NZS 3580	<p>The air quality monitoring conducted for the Teralba Quarry between February 2014 and February 2017 has involved dust deposition gauges at:</p> <ul style="list-style-type: none">Hillside Crescent – EPL identification No. 1;Rodgers Street – EPL identification No. 8;Rhondda Road – EPL identification No. 9;Margaret Street - EPL identification No. 10; andMyrtle Street - EPL identification No. 11. <p>A High Volume Air Sampler (HVAS) for PM₁₀ was installed in 2014 in accordance with the Environment Protection Licence 0536 condition P1.1 at approved EPA Identification Point No. 3 and AS/NZS 3580.</p>	Compliant
	EPA No.	Monitoring Point	Location Description			
	1	Dust deposition	Dust gauge located outside the premises boundary, labelled as "EPL1-Hillside" in Figure B titled "Surrounding Residences and Air Quality Monitoring Locations" attached to correspondence 20 Aug 2013 (EPA Ref: DOC13/45175)			
	3	High Volume Air Sampler PM ₁₀	HVAS located outside the premises boundary, labelled as "HVAS" in Figure B titled "Surrounding Residences and Air Quality Monitoring Locations" attached to correspondence 20 Aug 2013 (EPA Ref: DOC13/45175)			
	8	Dust deposition	Dust gauge located outside the premises boundary, labelled as "EPL2-Rodgers" in Figure B titled "Surrounding Residences and Air Quality Monitoring Locations" attached to correspondence 20 Aug 2013 (EPA Ref: DOC13/45175)			
	9	Dust deposition	Dust gauge located outside the premises boundary, labelled as "EPA3-Rhondda" in Figure B titled "Surrounding Residences and Air Quality Monitoring Locations" attached to correspondence 20 Aug 2013 (EPA Ref: DOC13/45175)			
	10	Dust deposition	Dust gauge located outside the premises boundary, labelled as "EPL4-Margaret" in Figure B titled "Surrounding Residences and Air Quality Monitoring Locations" attached to correspondence 20 Aug 2013 (EPA Ref: DOC13/45175)			
	11	Dust deposition	Dust gauge located outside the premises boundary, labelled as "EPL5-Myrtle" in Figure B "Surrounding Residences and Air Quality Monitoring Locations" attached to correspondence 20 Aug 2013 (EPA Ref: DOC13/45175).			

Condition No.	EPL Condition			Verification	Comment	Compliance
P1.2	The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.					Noted
P1.3	The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point. Water and Land			<ul style="list-style-type: none">Water Management Plan, Dec 2016Water Quality Monitoring Data, 2013 to 2016	Water monitoring conducted for the Teralba Quarry site currently includes: <ul style="list-style-type: none">Overflow point from the Mine Adit Dam labelled as "3" in Figure C titled "Water monitoring" – EPA Identification No. 4Overflow point from Dam B labelled as "4" in Figure C titled "Water monitoring"– EPA Identification No. 5. EPA monitoring points 6 and 7 are in the Northern Extension Area and as the no quarrying has occurred in the area between 2014 and 2017, Dam K and Dam J only catch the surface runoff water. No water has been released from Dams J (EPA Monitoring Point 6) and K (EPA Monitoring Point 5) and no monitoring has occurred between 2014 and 2017.	Noted
	EPA No.	Type of Monitoring Point	Location Description			
	4	Discharge to waters. Water quality monitoring	Overflow point from the Mine Adit Dam labelled as "3" in Figure C titled "Water monitoring" attached to correspondence dated 20 August 2013 (EPA Ref: DOC13/45175).			
	5	Discharge to waters. Water quality monitoring	Overflow point from Dam B labelled as "4" in Figure C titled "Water monitoring" attached to correspondence dated 20 August 2013 (EPA Ref: DOC13/45175).			
	6	Wet weather discharge to waters. Water quality monitoring.	North-western boundary of premises into unnamed north-western drainage line labelled as "5" in Figure C titled "Water Monitoring" attached to correspondence dated 20 August 2013 (EPA Ref: DOC13/45175).			
	7	Wet weather discharge to waters. Water quality monitoring.	North-eastern boundary of premises into north-eastern drainage line labelled as "6" in Figure C titled "Water Monitoring" attached to correspondence dated 20 August 2013 (EPA Ref: DOC13/45175)			
P1.4	The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or setting of limits for the emission of noise from the point.					

Condition No.	EPL Condition			Verification	Comment	Compliance
P1.4	Noise			<ul style="list-style-type: none">Noise Management Plan, Nov 2013Blast Management Plan, Oct 2013Approved Methods for Sampling of Air Pollutants in NSW, EPA 1997AS 2923-1987 Ambient Air – Guide for measurement of horizontal wind and air quality applications	Noise monitoring was conducted by Spectrum Acoustics in September 2014, July 2015, August 2016 and November 2016. Monitoring of blast overpressure and ground vibration had been conducted for each blast between 2014 and 2016. The meteorological station was installed on the northern side of Rhondda Road within the Teralba Quarry boundary at a site consistent with the requirements of AS 2923-1987.	
	EPA No.	Type of Monitoring Point	Location Description			
		From plan "Metromix Quarry Teralba Environmental Monitoring Points", prepared by Cadence Consulting Surveyors, version C 14/04/2014 (EPA Ref: DOC14/53874)				
	12	Noise Monitoring	Monitoring point located at 22 Awaba St. Teralba, labelled as "EPL-A"			
	13		Monitoring point located at 153 Railway St. Teralba, labelled as "EPL-B"			
	14		Monitoring point located at 8 Rhondda Rd. Teralba, labelled as "EPL-C"			
	15		Monitoring point located at 26 Rhondda Rd. Teralba, labelled as "EPL-D"			
	16		Monitoring point located at 26 Rhondda Rd. Teralba, labelled as "EPL-D"			
	17		Monitoring point located at 63 Victoria Ave. Teralba, labelled as "EPL-F"			
	18					
	19	Meteorological Station	Meteorological Station located within the premises. From Drawing "Figure E: Surrounding Residences and Blast Monitoring Locations" received by EPA on 21 Aug 2013 (EPA Ref: DOC13/47175) located to the east of the existing and approved extraction areas.			
	20	Air blast overpressure / ground vibration ppv monitoring	Monitoring Point labelled as "Blast monitoring location 1"			
	21		Monitoring Point labelled as "Blast monitoring location 2"			
	22		Monitoring Point labelled as "Blast monitoring location 3"			
3	Limit Conditions					
L1	Pollution of Waters					
L1.1	Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.			<ul style="list-style-type: none">Protection of the Environment Operations Act 1997, section 120		Noted
L2	Concentration Limits					
L2.1	For each monitoring/discharge point or utilisation area specified in the tables below (by a point number), the					Noted

Condition No.	EPL Condition	Verification	Comment	Compliance												
	concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.															
L2.2	Where a quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.			Noted												
L2.3	To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the tables.			Noted												
L2.4	<p>Water and/or Land Concentration Limits Points 5, 6, and 7</p> <table><tr><th>Pollutant</th><th>Units of Measure</th><th>100%ile concentration limit</th></tr><tr><td>Oil and Grease</td><td>mg/l</td><td>10</td></tr><tr><td>pH</td><td>pH units</td><td>6.5 – 8.5</td></tr><tr><td>Total Suspended Solids (TSS)</td><td>mg/L</td><td>50</td></tr></table>	Pollutant	Units of Measure	100%ile concentration limit	Oil and Grease	mg/l	10	pH	pH units	6.5 – 8.5	Total Suspended Solids (TSS)	mg/L	50	<ul style="list-style-type: none">Water Monitoring Data, Jan to Dec 2014Water Monitoring Data, Jan to Dec 2015Water Monitoring Data, Jan to Dec 2016	<p>Water monitoring results from the EPA approved monitoring points 4 and 5 conducted between February 2014 and February 2017 exhibited compliance with the concentration limits in condition L2.4.</p> <p>No discharge occurred between February 2014 and February 2017 from EPA discharge points 6 or 7.</p>	Compliant
Pollutant	Units of Measure	100%ile concentration limit														
Oil and Grease	mg/l	10														
pH	pH units	6.5 – 8.5														
Total Suspended Solids (TSS)	mg/L	50														
L2.5	<p>Discharges from Points 6 and 7 are only permitted when the quantity and duration of the rainfall event exceeds a 1 in 50year Annual Rainfall Intensity (ARI). <i>Note: A 50 year ARI rainfall event is taken to be one that exceeds that 50 year ARI rainfall intensity in the Intensity Frequency-Duration Table prepared by the Bureau of Meteorology (2013).</i></p>	<ul style="list-style-type: none">Water Monitoring Data, Jan to Dec 2014Water Monitoring Data, Jan to Dec 2015Water Monitoring Data, Jan to Dec 2016	No recorded discharges from Points 6 and 7 occurred between February 2014 and February 2017.	Not triggered												
L3	Volume and Mass Limits															
	<p>For each discharge point or utilisation area specified below (by a point number), the volume/mass of:</p> <p>a) liquids discharged to water; or;</p> <p>b) solids or liquids applied to the area;</p> <p>must not exceed the volume/mass limit specified for that discharge point or area.</p> <table><tr><th>Point</th><th>Units of Measure</th><th>Volume/Mass Limit</th></tr><tr><td>4</td><td>Kilolitres/day</td><td>-</td></tr><tr><td>5</td><td>Kilolitres/day</td><td>2000</td></tr><tr><td>6</td><td>Megalitres/year</td><td>113</td></tr></table>	Point	Units of Measure	Volume/Mass Limit	4	Kilolitres/day	-	5	Kilolitres/day	2000	6	Megalitres/year	113		<p>Water flow from Mine Adit Dam A release point 4 is continuously monitored to satisfy the volume limit specified in condition L3.</p>	Compliant
Point	Units of Measure	Volume/Mass Limit														
4	Kilolitres/day	-														
5	Kilolitres/day	2000														
6	Megalitres/year	113														
L4	Waste															
L4.1	The licensee must not cause, permit or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal or any waste generated at the premises to be disposed of at the premises, except as expressly permitted by the licence.		No waste generated outside the premises to be received at the Teralba Quarry site for storage, treatment, processing, reprocessing or disposal between February 2014 and February 2017.	Compliant												

Condition No.	EPL Condition				Verification	Comment	Compliance
L4.2	The licensee must not cause, permit or allow any waste to be received at the premises, except the wastes expressly referred to in the column titled "Waste" and meeting the definition, if any, in the column titled "Description" in the table below. Any waste received at the premises must only be used for the activities referred to in relation to that waste in the column titled "Activity" in the table below. This condition does not limit any other conditions in this licence.				.	Project Approval Schedule 2 condition 9 states – “The Proponent shall 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”. No concrete for recycling has been received on the Teralba Quarry site since July 2013.	Compliant
	Code	Waste	Description	Activity			
	NA	Concrete	Only concrete waste products received at the premises that is below licensing threshold in Schedule 1 of the Protection of the Environment Operations Act 1997 (POEO Act), in force from time to time.	As specified in each particular resource recovery exemption. Waste recycled or incorporated into various products must meet all conditions of the Recovered Aggregate Exemption 2010 resource recovery exemption under Clause 51 and Clause 51A of the Protection of Environment Operations (Waste) Regulation 2005 (POEO Waste Regulation).		The area of the site that received the concrete waste was licensed to the LMCC prior to July 2015. EPL 13015 was transferred to Metromix on 31 July 2015. The approximately 30,000t of concrete waste that had been received by LMCC prior to July 2015 has been crushed and screened by Metromix and will be sold as required.	Noted
L5	Noise Limits						
L5.1	Where a noise limit has not been prescribed, all operations and activities occurring on the premises must be conducted in a manner that will not cause offensive noise.					Attended noise monitoring conducted for the Teralba Quarry has demonstrated that the operations and activities are compliant with the noise criteria in EPL 0536 condition L5.2. The operations and activities at the Teralba Quarry are generally inaudible at the closest sensitive receivers.	Compliant
L5.2	Noise generated at the premises that is measured at each noise monitoring point established under this licence must not exceed the noise levels specified in Column 4 of the table below for that point during the corresponding time periods specified in Column 1 when measured using the corresponding measurement parameters listed in Column 2.				<ul style="list-style-type: none">Project Approval 10_0183 Schedule 3 conditionNoise Monitoring – Teralba Quarry, Spectrum Acoustics, 12 Jul 2015Noise Monitoring – Teralba Quarry, Spectrum Acoustics, 13 Sep 2016Noise Monitoring – Teralba Quarry, Spectrum Acoustics, 16 Dec 2016	Attended noise monitoring conducted by Spectrum Acoustics for the Teralba Quarry has demonstrated that the operations and activities are compliant with the noise criteria in EPL 0536 condition L5.2.	Compliant
	Point 12						
	Time Period	Measurement Parameter	Noise Level dB(A)				
	Day-Shoulder	LAeq (15 min)	38				
	Day	LAeq (15 min)	38				
Evening	LAeq (15 min)	37					
Point 12, 13, 14, 15, 16, 17, 18							
Time Period				Measurement Parameter	Noise Level dB(A)		
Night				LAeq (15 min)	35		

Condition No.	EPL Condition			Verification	Comment	Compliance
	Night	LA1 (1 min)	45			
	Point 13					
	Time Period	Measurement Parameter	Noise Level dB(A)			
	Day-Shoulder	LAeq (15 min)	46			
	Day	LAeq (15 min)	36			
	Evening	LAeq (15 min)	42			
	Point 14					
	Time Period	Measurement Parameter	Noise Level dB(A)			
	Day-Shoulder	LAeq (15 min)	38			
	Day	LAeq (15 min)	38			
	Evening	LAeq (15 min)	37			
	Point 15, 16, 18					
	Time Period	Measurement Parameter	Noise Level dB(A)			
	All Hours	LAeq (15 min)	35			
	Point 17					
	Time Period	Measurement Parameter	Noise Level dB(A)			
	Day-Shoulder	LAeq (15 min)	37			
Day	LAeq (15 min)	38				
Evening	LAeq (15 min)	38				
L5.3	For the purposes of the condition above: a) Day-Shoulder is defined as the period between 6am to 7am Monday to Saturday. b) Day is defined as: (i) the period from 7am to 6pm Monday to Saturday; and (ii) the period from 8am to 6pm Sundays and Public Holidays. c) Evening is defined as the period from 6pm to 10pm. d) Night is defined as: (i) the period from 10pm to 7am Monday to Saturday; and (ii) the period from 10pm to 8am Sundays and Public Holidays.					Noted
L5.4	The contributed noise level from the premises must not exceed the noise limits specified within this licence at the most noise-affected point on or within the boundary of any residential premises to the north and/or south of the premises, except as expressly provided by this licence, or by the EPA in writing.					Noted


Condition No.	EPL Condition	Verification	Comment	Compliance
L5.5	The noise limits specified within this licence apply under all meteorological conditions except for any one of the following: a) Wind speeds greater than 3 metres/second at 10 metres above ground level; or b) Stability category F temperature inversion conditions and wind speeds greater the 2 metres/second at 10 metres above ground level; or c) Stability category G temperature inversion conditions.			Noted
L5.6	For the purpose of the conditions specified within this licence: a) the meteorological data to be used for determining meteorological conditions is the data recorded at the meteorological station identified in this licence as Point 19. b) Stability category temperature inversion conditions are to be determined by the sigma-theta method referred to in Part E4 of Appendix E to the <i>NSW industrial Noise Policy</i> (EPA 2000). <i>Note: The weather station must be designed, commissioned and operated in a manner to obtain the necessary parameters required by specified conditions of this licence.</i>			Noted
L5.7	Determining Compliance To determine compliance: a) with the Leq(15 minute) noise limits in the Noise Limits table, the noise measurement equipment must be located: i) approximately on the property boundary, where any dwelling is situated 30 metres or less from the property boundary closest to the premises; or ii) within 30 metres of a dwelling façade, but not closer than 3m, where any dwelling on the property is situated more than 30 metres from the property boundary closest to the premises; or, where applicable iii) within approximately 50 metres of the boundary of a National Park or a Nature Reserve. b) with the LA1(1 minute) noise limits in the Noise Limits table, the noise measurement equipment must be located within 1 metre of a dwelling façade. c) with the noise limits in the Noise Limits table, the noise measurement equipment must be located: i) at the most affected point at a location where there is no dwelling at the location; or ii) at the most affected point within an area at a location prescribed by part (a) or part (b) of this condition.			Noted

Condition No.	EPL Condition	Verification	Comment	Compliance															
L5.8	A non-compliance will still occur where noise generated from the premises in excess of the appropriate noise limit is measured: a) at a location other than an area prescribed by the conditions of this licence, and /or b) at a point other than the most affected point at a location.			Noted															
L5.9	For the purposes of determining the noise generated at the premises the licensee must use a Class 1 or Class 2 noise monitoring device as defined by AS IEC61672.1 and AS IEC61672.2-2004, or other noise monitoring equipment accepted by the EPA in writing.			Noted															
L5.10	For the purposes of determining the noise generated at the premises the modification factors in Section 4 of the NSW Industrial Noise Policy must be applied, as appropriate, to the noise levels measured by the noise monitoring equipment.			Noted															
L6	Blasting																		
L6.1	Blasting Hours Blasting operations at the premises may only take place between 10:00 am and 4:00 pm Monday to Friday. No blasting is allowed on weekends, public holidays, or any other time without written approval from the EPA.		Blasting at the Teralba Quarry has only been carried out between 1000 hours and 1600 hours Monday to Friday. No blasting has occurred on weekends or Public Holidays.	Compliant															
L6.2	The licensee is only permitted to carry out one (1) blast per day at the premises, unless an additional blast is required following a blast misfire.	<ul style="list-style-type: none">Blast Monitoring Results Teralba Quarry, 2013	<div>Between February 2014 and December 2016 more than one blast was conducted in one day on 4 occasions:</div> <table><tr><th>Date</th><th>Times</th><th>Location</th></tr><tr><td>24/4/14</td><td>1241 & 1300pm</td><td>Ramp #1</td></tr><tr><td>20/5/14</td><td>1432pm</td><td>Ramp #2</td></tr><tr><td>15/4/15</td><td>1350pm</td><td>Stage 1A</td></tr><tr><td>23/6/15</td><td>1300pm</td><td>Stage 1A</td></tr></table> <div>Generally, only one blast was conducted on any one day, in accordance with Project Approval Schedule 3 condition 11 between February 2014 and February 2017.</div>	Date	Times	Location	24/4/14	1241 & 1300pm	Ramp #1	20/5/14	1432pm	Ramp #2	15/4/15	1350pm	Stage 1A	23/6/15	1300pm	Stage 1A	Non-compliance (Low Risk – 2014 and 2015)
Date	Times	Location																	
24/4/14	1241 & 1300pm	Ramp #1																	
20/5/14	1432pm	Ramp #2																	
15/4/15	1350pm	Stage 1A																	
23/6/15	1300pm	Stage 1A																	
L6.3	The airblast overpressure level from blasting operations in or on the premises must not exceed: a) 115 dB (Lin Peak) for more than 5% of the total number of blasts during each reporting period; and b) 120 dB (Lin Peak) at any time. At any sensitive noise location. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.		<div>No blast monitoring between February 2014 and February 2017 recorded overpressure results greater than the 120dBL criteria.</div> <div>One (1) blast in August 2014 recorded an overpressure result greater than 115dB. All other blasts were less than 115dBL between 2014 and February 2017.</div>	Compliant															
L6.4	The ground vibration peak particle velocity from blasting operations carried out in or on the premises must not exceed:		No blast monitoring between February 2014 and February 2017 recorded vibration results greater than the 5mm/s criteria.	Compliant															

Condition No.	EPL Condition	Verification	Comment	Compliance																
	a) 5 mm/s for more than 5% of the total number of blasts carried out on the premises during each reporting period; and b) 10 mm/s at any time. At any noise sensitive location. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.																			
L6.5	Blasting limits apply at any residence, or noise sensitive location that is not owned by the licensee or subject of a private agreement between the owner of the residence or noise sensitive location and the licensee as to an alternative ground vibration or overpressure level. <i>Note: For the purposes of the conditions within this licence:</i> a) Noise sensitive location includes any residence, hospital, school, childcare centre, theatre, place of worship, other similar building occupied by people, and any land within 30 metres of any afore-mentioned building. b) A noise sensitive location excludes any premises owned by the licensee.		Blast limits were not exceeded at any residence or noise sensitive location not owned by Metromix between February 2014 and February 2017.	Compliant																
L6.6	The licensee is only permitted to carry out one (1) blast per day at the premises, unless an additional blast is required following a blast misfire.	• Blast Monitoring Data, 2013	Refer to comments on EPL 0536 condition L6.2.	Noted																
L7	Hours of Operation																			
L7.1	<div><div>The licensee must comply with the operating hours specified in Column 2, Column 3, and Column 4 of the table below:</div><table><tr><td>Day</td><td>Loading and Dispatch of Trucks</td><td>Extraction and Processing</td><td>Receipt of Concrete</td></tr><tr><td>Monday to Friday</td><td>4am Monday to Midnight Friday</td><td>7am to 7pm</td><td>7am to 5pm</td></tr><tr><td>Saturday</td><td>Midnight Friday to 6pm Saturday</td><td>7am to 2pm</td><td>7am to 2pm</td></tr><tr><td>Sundays and Public Holidays</td><td>None</td><td>None</td><td>None</td></tr></table><div><i>Note: For the purpose of the hours of operations specified within this licence:</i> 1. Maintenance activities may occur at any time provided they are inaudible at privately-owned residence.</div></div>	Day	Loading and Dispatch of Trucks	Extraction and Processing	Receipt of Concrete	Monday to Friday	4am Monday to Midnight Friday	7am to 7pm	7am to 5pm	Saturday	Midnight Friday to 6pm Saturday	7am to 2pm	7am to 2pm	Sundays and Public Holidays	None	None	None	•	Operations at the Metromix Teralba Quarry have occurred within the hours of operation specified in EPL 0536 Condition L7.1, Project Approval 08_0183 Schedule 2 condition 6 and Statement of Commitment 2.	Compliant
Day	Loading and Dispatch of Trucks	Extraction and Processing	Receipt of Concrete																	
Monday to Friday	4am Monday to Midnight Friday	7am to 7pm	7am to 5pm																	
Saturday	Midnight Friday to 6pm Saturday	7am to 2pm	7am to 2pm																	
Sundays and Public Holidays	None	None	None																	


Condition No.	EPL Condition	Verification	Comment	Compliance
	<p>2. The hours of operations may be varied with written consent if the EPA is satisfied that the amenity of the residents in the locality will not be adversely affected.</p> <p>3. The licensee may apply to vary the hours of operations specified in this licence by submitting a Licence Variation Application to the EPA. It is recommended that supporting documentation is provide to assist the EPA with the assessment of the Application.</p>			
L7.2	This condition does not apply to the delivery of material outside the hours of operation permitted by condition L7, if that delivery is required by police or other authorities for safety reasons; and/or the operation or personnel or equipment are endangered. In such circumstances, prior notification must be provided to the EPA and affected residents as soon as possible or within a reasonable period in the case of emergency.			Noted
L7.3	<p>The licensee must provide the following within 48 hours of notifying the EPA:</p> <ul style="list-style-type: none"> a) supporting documentation from the requesting agency or other authorities outlining the purpose and circumstances involving the delivery outside the hours of operations specified within this licence; b) evidence of notification of affected residents; c) letter of approval of delivery from the Minister for Planning & Environment; d) time and location of delivery; e) type and volume of products delivered; f) the name, address and business hours telephone number of persons and/or authorities relevant to the delivery; and g) any other relevant matters. <p>The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the documentation provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.</p> <p><i>Note: If the EPA has reasonable grounds to believe the delivery is contrary to the exemptions made as specified within this licence, then the EPA may consider the delivery outside the nominated hours of operations as a non-compliance for the reporting period.</i></p>			Not triggered
L8	Potentially Offensive Odour			
L8.1	No condition of this licence identifies a potentially offensive odour for the purposes of Section 129 of the Protection of the Environment Operations Act 1997.	<i>Protection of the Environment Operations Act 1997</i>		Noted
L8.2	The licensee must not cause or permit the emission of offensive odour beyond the boundary of the premises.		The activities undertaken by Metromix at the Teralba Quarry have not resulted in the generation of any offensive odour.	Compliant

Condition No.	EPL Condition	Verification	Comment	Compliance
4	Operating Conditions			
O1	Activities Must be Carried Out in a Competent Manner			
O1.1	Licensed activities must be carried out in a competent manner. This includes: a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.		The processing, handling, movement and storage of materials and substances used to carry out the Teralba Quarry activities are carried out in a competent manner.	Compliant
O2	Maintenance of Plant and Equipment			
O2.1	All plant and equipment installed at the premises or used in connection with the licensed activity: (a) must be maintained in a proper and efficient condition; and (b) must be operated in a proper and efficient manner.		All equipment and vehicles operated at the Teralba Quarry by Metromix are maintained in accordance with the manufacturer's specifications at the on-site workshops.	Compliant
O2.2	For the purpose of the above condition plant is defined in the dictionary. The type of plant that should be considered includes, but is not limited to, Underground Petroleum Storage Systems (UPSS), drainage systems, infrastructure and pollution control equipment such as (but not limited to) spill containment and clean-up equipment; dust screens and collectors; sediment collection systems; traps and sumps; waste collection; storage and disposal equipment. <i>Note: Information on the prevention of contamination is provided in Contaminated Sites: Prevention of Contamination at Marina Sites, 2007. UPSS installation and management must be undertaken in accordance with the Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2008</i>			Noted
O3	Dust			
O3.1	The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.	• Air Quality Management Plan, Oct 2013	Operations and activities at the Teralba Quarry were observed to be managed to minimise the generation and emission of dust from the premises.	Compliant Ongoing
O3.2	All operations and activities occurring at the premises must be carried out in a manner that will minimise the emission of dust from the premises.	• Air Quality Management Plan, Oct 2013		Compliant Ongoing
O4	Emergency Response			
O4.1	Within three months of the date of the issue of this licence, the licensee must develop, or update, an emergency response plan which documents the procedures to deal with all types of incidents (e.g. spill, explosions or fire) that may occur at the premises or outside of the premises (e.g. during transfer) which are likely to cause harm to the environment.	• Environmental Management Strategy, August 2013	The Environmental Management Strategy section 10 provides the procedures to be implemented in the event of an emergency within the Teralba Quarry site. The emergency response outlines procedures to be followed for mobile or fixed plant fires, bushfire within or encroaching on the Teralba Quarry site, hydrocarbon spill response and failure	Compliant

Condition No.	EPL Condition	Verification	Comment	Compliance
			of quarry high-wall or unplanned collapse of quarry floor.	
O5	Processes and Management			
O5.1	Bunds must: a) have walls and floors constructed of impervious materials; b) be of sufficient capacity to contain 110% of the volume of the tank (or 110% volume of the largest tank where a group of tanks are installed); c) have floors graded to a collection sump; and d) not have a drain valve incorporated in the bund structure, or be constructed and operated in a manner that achieves the same environmental outcome.	<ul style="list-style-type: none"> AS 1940 	a) The bund walls and floors of the areas around the aboveground storage tanks have been constructed in accordance with AS 1940. b) The drums and palletons of maintenance oils and lubricants are stored in a roofed building on a concrete floor, with smaller drums stored on portable trays to collect any spillage or leakage.	Compliant
O5.2	The drainage from all areas that will mobilise suspended solids when stormwater runs over these areas must be controlled and diverted through appropriate erosion and sediment control measures.	<ul style="list-style-type: none"> Water Management Plan, section 8, Dec 2016 	All surface runoff from disturbed areas of the Teralba Quarry site is controlled and retained in sediment basins.	Compliant Ongoing
O5.3	All erosion and sediment control measures including sedimentation basins must be maintained to ensure that their design capacity is available at all times for the storage and treatment of all run off received from all drainage areas at the premises.	<ul style="list-style-type: none"> Water Management Plan, section 8, Dec 2016 	The erosion and sediment control structures are maintained to ensure that all surface runoff received from all drainage areas on the Teralba Quarry premises can be retained (and if necessary treated) before any discharge would occur to the environment. No releases of turbid water from the sediment basins direct to the environment occurred between February 2014 and February 2017.	Compliant
O6	Other Operating Conditions			
O6.1	The licensee must ensure that activities are conducted in an environmentally satisfactory manner, so as to minimise and prevent the pollution of air and water the licensee must: (a) Ensure that vehicles or containers prior to leaving the premises are clean and sealed in a manner that will not cause materials or wastes used in conducting the activities at the premises to be tracked, thrown from, blown, fall, or cast from any vehicle or container onto a public road. (b) The licensee must have in place and implement procedures to ensure that vehicles and containers exiting the premises are in a condition to ensure that materials are not tracked, thrown, blown, fall or cast onto a public road.		All trucks exiting the Teralba Quarry site pass through a wheel and undercarriage wash to remove any loose materials from the vehicle and all load are covered to reduce potential for loss of material from the trucks to public roads. An incident resulting in silt and clay material being tracked onto Rhondda Rd occurred on 26 May 2016. Metromix responded washing down all asphalt and concrete pavements within the Teralba Quarry site and installation of additional water sprays and concreted work were completed to reduce the potential for repeat occurrence during prolonged dry periods.	Compliant Ongoing Non-Compliance (Moderate Risk)
O6.2	All above-ground tanks containing material that is likely to cause environmental harm must be bunded or have an alternative spill containment system in place.	<ul style="list-style-type: none"> AS 1940 	The above-ground storage tank for fuel and oils are bunded in accordance with AS 1940.	Compliant Ongoing
5	Monitoring and Recording Conditions			
M1	Monitoring Records			

Condition No.	EPL Condition	Verification	Comment	Compliance																
M1.1	The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.		All monitoring required to be conducted by this licence are recorded and retained by Metromix in accordance with this condition.	Compliant Ongoing																
M1.2	All records required to be kept by this licence must be: a) in a legible form, or in a form that can readily be reduced to a legible form; b) kept for at least 4 years after the monitoring or event to which they relate took place; and c) produced in a legible form to any authorised officer of the EPA who asks to see them.		Records and documentation associated with the operation of the Teralba Quarry are kept in a legible form and available on request from the Site Manager. Environmental monitoring results are available on the Metromix website.	Compliant Ongoing																
M1.3	The following records must be kept in respect of any samples required to be collected for the purposes of this licence: a) the date(s) on which the sample was taken; b) the time(s) at which the sample was collected; c) the point at which the sample was taken; and d) the name of the person who collected the sample		Monitoring records for samples collected from the Teralba Quarry to satisfy the requirements of this EPL and include the date, time, monitoring point identification and name of the person who collected the sample.	Compliant Ongoing																
M2	Requirement to Monitor Concentration of Pollutants Discharged																			
M2.1	For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:			Noted																
M2.2	<div>Air Monitoring Requirements POINTS 1,8,9,10,11<table><tr><th>Pollutant</th><th>Units of Measure</th><th>Frequency</th><th>Sampling Method</th></tr><tr><td>Particulates – deposited matter</td><td>g/m²/month</td><td>Once/month</td><td>AM-19</td></tr></table>POINT 3<table><tr><th>Pollutant</th><th>Units of Measure</th><th>Frequency</th><th>Sampling Method</th></tr><tr><td>PM₁₀</td><td>µg/m³</td><td>Every 6 days</td><td>AM-18</td></tr></table></div>	Pollutant	Units of Measure	Frequency	Sampling Method	Particulates – deposited matter	g/m ² /month	Once/month	AM-19	Pollutant	Units of Measure	Frequency	Sampling Method	PM ₁₀	µg/m ³	Every 6 days	AM-18	<ul style="list-style-type: none">Air Quality Management Plan, section 9, Sep 2013	Deposited dust gauges at EPA approved monitoring points 1, 8, 9, 10 and 11 were installed in accordance with EPL 0536 condition P1.1 and frequency of monitoring conducted in accordance with the EPL condition M2.2 requirements. HVAS PM ₁₀ monitor was installed in 2014 at Monitoring Point 3 in accordance with EPL 0536 condition P1.1 and the frequency of monitoring has been conducted in accordance with the EPL condition M2.2 requirements.	Compliant
Pollutant	Units of Measure	Frequency	Sampling Method																	
Particulates – deposited matter	g/m ² /month	Once/month	AM-19																	
Pollutant	Units of Measure	Frequency	Sampling Method																	
PM ₁₀	µg/m ³	Every 6 days	AM-18																	

Condition No.	EPL Condition	Verification	Comment	Compliance																																										
M2.3	<p>Water and/ or Land Monitoring Requirements</p> <p>Point 4</p> <table><tr><th>Pollutant</th><th>Units of Measure</th><th>Frequency</th><th>Sampling Method</th></tr><tr><td>EC</td><td>µS/cm</td><td rowspan="4">Monthly</td><td rowspan="4">Grab sample</td></tr><tr><td>Oil and Grease</td><td>mg/l</td></tr><tr><td>pH</td><td>pH units</td></tr><tr><td>TSS</td><td>mg/L</td></tr></table> <p>Point 5</p> <table><tr><th>Pollutant</th><th>Units of Measure</th><th>Frequency</th><th>Sampling Method</th></tr><tr><td>EC</td><td>µS/cm</td><td rowspan="4">Daily during any discharge</td><td rowspan="4">Grab sample</td></tr><tr><td>Oil and Grease</td><td>mg/l</td></tr><tr><td>pH</td><td>pH units</td></tr><tr><td>TSS</td><td>mg/L</td></tr></table> <p>Point 6 and 7</p> <table><tr><th>Pollutant</th><th>Units of Measure</th><th>Frequency</th><th>Sampling Method</th></tr><tr><td>pH</td><td>pH units</td><td rowspan="4">Special frequency 1</td><td rowspan="4">Grab sample</td></tr><tr><td>TSS</td><td>mg/L</td></tr><tr><td>Conductivity</td><td>µS/cm</td></tr><tr><td>Oil and Grease</td><td>mg/l</td></tr></table>	Pollutant	Units of Measure	Frequency	Sampling Method	EC	µS/cm	Monthly	Grab sample	Oil and Grease	mg/l	pH	pH units	TSS	mg/L	Pollutant	Units of Measure	Frequency	Sampling Method	EC	µS/cm	Daily during any discharge	Grab sample	Oil and Grease	mg/l	pH	pH units	TSS	mg/L	Pollutant	Units of Measure	Frequency	Sampling Method	pH	pH units	Special frequency 1	Grab sample	TSS	mg/L	Conductivity	µS/cm	Oil and Grease	mg/l	<ul style="list-style-type: none">Water Management Plan, section 9, Dec 2016	<p>Water monitoring conducted for the Teralba Quarry site currently includes:</p> <ul style="list-style-type: none">EPA Identification No. 4 - Overflow point from the Mine Adit Dam labelled as "3" in Figure C titled "Water monitoring"; andEPA Identification No. 5 - Overflow point from Dam B labelled as "4" in Figure C titled "Water monitoring"; <p>in accordance with EPL condition M2.3.</p> <p>EPA monitoring points 6 and 7 are in the Northern Extension Area. No water has been released from Dam J or Dam K between February 2014 and February 2017, so no water monitoring occurred.</p>	Compliant
Pollutant	Units of Measure	Frequency	Sampling Method																																											
EC	µS/cm	Monthly	Grab sample																																											
Oil and Grease	mg/l																																													
pH	pH units																																													
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TSS	mg/L																																													
Conductivity	µS/cm																																													
Oil and Grease	mg/l																																													
M2.4	For Special Frequency 1 the licensee must monitor within 8 hours of commencing discharge and weekly thereafter during discharge.			Noted																																										
M3	Testing Methods – Concentration Limits																																													
M3.1	<p>Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with:</p> <p>a) any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or</p> <p>b) if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or</p> <p>c) if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.</p>	<ul style="list-style-type: none">Approved Methods for the Sampling and Analysis of Air Pollutants in NSW, DEC, Jan 2007AS 3580.10.1-2003 Method for sampling and analysis of ambient air: Determination of Particulate Matter-Deposited Dust	Air quality monitoring and testing has occurred in accordance with Approved Methods for Sampling and Analysis of Air Pollutants in NSW and Australian Standards.	Compliant																																										
M3.2	Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods	<ul style="list-style-type: none">Approved Methods for the Sampling and Analysis of Water Pollutants in NSW, DECC Mar 2004	Water quality monitoring and testing has occurred in accordance with Approved Methods for Sampling and Analysis of Water Pollutants in NSW, APHA Standard Methods for Examination of Water and Wastewater, and Australian Standards.	Compliant																																										

Condition No.	EPL Condition	Verification	Comment	Compliance																																
	Publication unless another method has been approved by the EPA in writing before any tests are conducted.	<ul style="list-style-type: none">AS/NZS 5667.1:1998APHA Standard Methods for Examination of Water and Wastewater, 22nd Edition, 2012																																		
M4	Weather Monitoring																																			
M4.1	<p>At the point(s) identified below, the licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1 of the table below, using the corresponding sampling method, units of measure, averaging period and sampling frequency, specified opposite in the Columns 2, 3, 4 and 5 respectively.</p> <p>Point 19</p> <table><tr><th>Parameter</th><th>Method</th><th>Unit of Measure</th><th>Averaging Period</th><th>Frequency</th></tr><tr><td>Rainfall</td><td>AM-4</td><td>mm</td><td>1 hour</td><td rowspan="8">Continuous</td></tr><tr><td>Wind direction @ 10m</td><td rowspan="2">AM-2 & AM-4</td><td>Degrees</td><td rowspan="4">15 mins</td></tr><tr><td>Wind speed @ 10m</td><td>m/s</td></tr><tr><td>Temp @ 2m</td><td>AM-4</td><td>Degrees Celsius</td></tr><tr><td>Temp @ 10m</td><td>AM-4</td><td>Degrees Celsius</td></tr><tr><td>Sigma-Theta</td><td>AM-2 & AM-4</td><td>Degrees</td></tr><tr><td>Solar radiation</td><td>AM-4</td><td>Watts/m²</td></tr><tr><td>Relative humidity</td><td>AM-4</td><td>%</td><td>1 hour</td></tr></table>	Parameter	Method	Unit of Measure	Averaging Period	Frequency	Rainfall	AM-4	mm	1 hour	Continuous	Wind direction @ 10m	AM-2 & AM-4	Degrees	15 mins	Wind speed @ 10m	m/s	Temp @ 2m	AM-4	Degrees Celsius	Temp @ 10m	AM-4	Degrees Celsius	Sigma-Theta	AM-2 & AM-4	Degrees	Solar radiation	AM-4	Watts/m ²	Relative humidity	AM-4	%	1 hour	 <ul style="list-style-type: none"><i>Approved Methods for Sampling of Air Pollutants in NSW, EPA 1997</i>AS 2923-1987 <i>Ambient Air – Guide for measurement of horizontal wind and air quality applications</i>	<p>Metromix installed an automated meteorological station on-site, located 70m north of Rhondda Road adjacent to the access road to the Northern Extension Area.</p> <p>The meteorological station is sited on an area that satisfies AS 2922:1987 <i>Ambient Air - Guide for the Siting of Sampling Units</i> (NSW DECCW Method AM-1), and the <i>Approved methods for the sampling and analysis of air pollutants in NSW</i> (DECC, 2005).</p> <ul style="list-style-type: none">The station complies within the requirements in the "<i>Approved Methods for Sampling of Air Pollutants in NSW</i>" Table 1. The meteorological station records temperature, rainfall; dew point and humidity, solar radiation, air pressure; and fire danger index. <p>Recording of meteorological parameters was interrupted during 2015. The meteorological station was not operational for a period of 118 days due to a serious fault when the solar battery continually lost charge shutting down the station. The battery was replaced in October 2015 remedying the fault.</p>	<div>Compliant Ongoing</div> <div>Administrative Non-Compliance</div>
Parameter	Method	Unit of Measure	Averaging Period	Frequency																																
Rainfall	AM-4	mm	1 hour	Continuous																																
Wind direction @ 10m	AM-2 & AM-4	Degrees	15 mins																																	
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Sigma-Theta	AM-2 & AM-4	Degrees																																		
Solar radiation	AM-4	Watts/m ²																																		
Relative humidity	AM-4	%	1 hour																																	
M4.2	For the purpose of condition above, Point 19 refers to the meteorological station established on the premises.			Noted																																
M4.3	Within one month of the date of issue of this licence, a site plan prepared by a registered surveyor identifying specific location of, including the grid coordinates of Point 19 must be submitted to the EPA in both electronic and hard copy formats.	<ul style="list-style-type: none">Environmental Monitoring Points – Teralba Quarry, Cadence Consulting Surveyors, 20 Apr 2015	A site plan prepared by a Cadence Consulting Surveyors identifying the specific locations and grid coordinates for each monitoring point including the meteorological station, was submitted to the EPA on 20 April 2015.	Compliant																																
M5	Recording of Pollution Complaints																																			
M5.1	The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.		All complaints received by Metromix in relation to the operation and activities of the Teralba Quarry are recorded on the Complaints Register and are available on the company website.	Compliant Ongoing																																
M5.2	The record must include details of the following: a) the date and time of the complaint; b) the method by which the complaint was made; c) any personal details of the complainant which	<ul style="list-style-type: none">Community Complaints Register, 2016Community Complaints Register, 2015	The Community Complaints Register records: <ul style="list-style-type: none">date of the complaint;method by which the complaint was made;any personal details of the	Compliant Ongoing																																

Condition No.	EPL Condition	Verification	Comment	Compliance												
	were provided by the complainant or, if no such details were provided, a note to that effect; d) the nature of the complaint; e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and f) if no action was taken by the licensee, the reasons why no action was taken.	<ul style="list-style-type: none">Community Complaints Register, 2014	complainant where provided; <ul style="list-style-type: none">nature of the complaint;action taken and any follow-up contact with the complainant.													
M5.3	The record of a complaint must be kept for at least 4 years after the complaint was made.		A summary of all complaints are posted on the Metromix website.	Noted												
M5.3	The record must be produced to any authorised officer of the EPA who asks to see them.			Noted												
M6	Telephone Complaints Line															
M6.1	The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.		Contact telephone numbers for Metromix head office and Teralba Quarry site is on the signage at the entrance to the Teralba Quarry site from Rhonnda Road and are listed on the Metromix website – Contacts.	Compliant												
M6.2	The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.		The contact telephone number for the Teralba Quarry is notified on the Entrance to the quarry off Rhonnda Road and on the for Metromix website – Contacts.	Compliant												
M6.3	The preceding two conditions do not apply until 1 month after the date of the issue of this licence.			Noted												
M7	Requirement to Monitor Volume or Mass															
M7.1	For each discharge point or utilisation area specified below, the licensee must monitor: (a) the volume of liquids discharged to water or applied to the area; (b) the mass of solids applied to the area; (c) the mass of pollutants emitted to the air; (d) at the frequency and using the method and units of measure, specified below. Point 4 <table><tr><th>Frequency</th><th>Units of Measure</th><th>Sampling Method</th></tr><tr><td>Continuous during discharge</td><td>kL / day</td><td>Flow meter and continuous logger</td></tr></table> Point 5 <table><tr><th>Frequency</th><th>Units of Measure</th><th>Sampling Method</th></tr><tr><td>Continuous during discharge</td><td>kL / day</td><td>Flow meter and continuous logger</td></tr></table> Point 5	Frequency	Units of Measure	Sampling Method	Continuous during discharge	kL / day	Flow meter and continuous logger	Frequency	Units of Measure	Sampling Method	Continuous during discharge	kL / day	Flow meter and continuous logger		The flow rate and volume of any water discharged from Mine Adit Dam A to the environment is monitored by a continuous logger.	Compliant
Frequency	Units of Measure	Sampling Method														
Continuous during discharge	kL / day	Flow meter and continuous logger														
Frequency	Units of Measure	Sampling Method														
Continuous during discharge	kL / day	Flow meter and continuous logger														

Condition No.	EPL Condition				Verification	Comment	Compliance												
	Frequency	Units of Measure	Sampling Method																
	Continuous during discharge	ML / day	Flow meter and continuous logger																
M8	Blasting																		
M8.1	To determine compliance: (a) Airblast pressure and ground vibration must be measured at any residence or noise sensitive location that is likely to be most affected and is not owned by the licensee or subject of a private agreement between the owner of the residence or noise sensitive site and the licensee as to an alternative blasting level - for all blasts carried out in or on the premises; and (b) Instrumentation used to measure the airblast overpressure and ground vibration must meet the requirements of AS2187.2-2006.				<ul style="list-style-type: none">Blast Management Plan, section 9.2, Oct 2013	All Teralba Quarry blasts are monitored for overpressure and vibration at fixed blast monitors in accordance with the approved locations identified in the Blast Management Plan.	Compliant												
M9	Noise Monitoring																		
M9.1	To assess compliance with the noise limits specified within this licence, the licensee must undertake operator attended noise monitoring at each specified noise monitoring point in accordance with the table below. Points 12,13,15,16,18 <table><tr><th>Assessment Period</th><th>Min. Frequency of reporting</th><th>Min. Duration of Assessment</th><th>Min. No. of Assessment Period</th></tr><tr><td>Day</td><td rowspan="3">2 times a year</td><td>1.5 hours</td><td rowspan="3">3 consecutive operation days</td></tr><tr><td>Evening</td><td>30 mins</td></tr><tr><td>Night</td><td>1 hour</td></tr></table>				Assessment Period	Min. Frequency of reporting	Min. Duration of Assessment	Min. No. of Assessment Period	Day	2 times a year	1.5 hours	3 consecutive operation days	Evening	30 mins	Night	1 hour	<ul style="list-style-type: none">Noise Monitoring – Teralba Quarry, Spectrum Acoustics, Sep 2014Noise Monitoring – Teralba Quarry, Spectrum Acoustics, 12 Jul 2015Noise Monitoring – Teralba Quarry, Spectrum Acoustics, 13 Sep 2016Noise Monitoring – Teralba Quarry, Spectrum Acoustics, 16 Dec 2016	Attended noise monitoring has been conducted during night-time, shoulder and daytime periods by Spectrum Acoustics to address the requirements of Project Approval 10_0183 Schedule 3 condition 8(d), Project Approval 10_0183 Appendix 3 - Statement of Commitment 10.6, and EPL 0536 condition L5.2. The noise monitoring was conducted 2 times per year August 2016 and November 2016. The noise monitoring was conducted once per year in 2014 and 2015 (September 2014 and July 2015). The attended noise monitoring conducted for the Teralba Quarry demonstrated that the operations and activities are compliant with the noise criteria in EPL 0536 condition L5.2.	Compliant
Assessment Period	Min. Frequency of reporting	Min. Duration of Assessment	Min. No. of Assessment Period																
Day	2 times a year	1.5 hours	3 consecutive operation days																
Evening		30 mins																	
Night		1 hour																	
M9.2	The licensee must undertake the operator attended noise monitoring at each one of or at one or more noise monitoring points that is representative of the worse-case location(s) listed in this licence.					Operator attended noise monitoring has been conducted at representative worse-case location(s) listed in this licence.	Compliant												
6	Reporting Conditions																		
R1	Annual Return Documents																		
R1.1	The licensee must complete and supply to the EPA an Annual Return in the approved form comprising: (a) a Statement of Compliance; and (b) Monitoring and Complaints Summary.				<ul style="list-style-type: none">Environment Protection Licence 0536Notice of Variation 1512791 - EPL 536, 7 Jul 2014Notice of Variation 1529551 - EPL 536, 3 Jul 2015	The Annual Returns for EPL 0536 have been submitted to the EPA on the approved forms including a signed Statement of Compliance; and a Monitoring and Complaints Summary.	Compliant												

Condition No.	EPL Condition	Verification	Comment	Compliance
	At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.	<ul style="list-style-type: none"> Annual Return 1 June 2014 to 31 May 2015 Annual Return 1 Jun 2015 to 31 May 2016 		
R1.2	An Annual Return must be prepared in respect of each reporting period, except as provided below. <i>Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.</i>			Noted
R1.3	Where this licence is transferred from the licensee to a new licensee: (a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and (b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period. <i>Note: An application to transfer a licence must be made in the approved form for this purpose.</i>			Not applicable
R1.4	Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on: (a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or (b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.			Not applicable
R1.5	The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').	<ul style="list-style-type: none"> Annual Return 1 June 2014 to 31 May 2015 Annual Return 1 Jun 2015 to 31 May 2016 	The Annual Returns for EPL 0536 have been submitted to the EPA on the approved forms within 60 days of the end of each reporting period.	Compliant
R1.6	The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA	<ul style="list-style-type: none"> Annual Return 1 June 2014 to 31 May 2015 Annual Return 1 Jun 2015 to 31 May 2016 	A copy of each Annual Return supplied to the EPA is retained by Metromix.	Compliant
R1.7	Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by: (a) the licence holder; or (b) by a person approved in writing by the EPA to sign on behalf of the licence holder.	<ul style="list-style-type: none"> Annual Return 1 June 2014 to 31 May 2015 Annual Return 1 Jun 2015 to 31 May 2016 	The Annual Returns for EPL 0536 have been submitted to the EPA on the approved forms signed/certified by Company Directors.	Compliant
R1.8	The licensee must report any exceedance of the licence blasting limits to the regional office of the EPA as soon as		No blast limit exceedance occurred between 2014 and February 2017.	Not triggered

Condition No.	EPL Condition	Verification	Comment	Compliance
	practicable after the exceedance becomes known to the licensee or to one of the licensee's employees or agents.			
R2	Notification of Environmental Harm			
	<i>Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.</i>			
R2.1	Notifications must be made by telephoning the Environment Line service on 131 555.			Noted
R2.2	The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.			Noted
R3	Written Report			
R3.1	Where an authorised officer of the EPA suspects on reasonable grounds that: a) where this licence applies to premises, an event has occurred at the premises; or b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence, and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.	<ul style="list-style-type: none"> Letter from EPA re s.64 Contravention of Licence Condition, 28 Jun 2016 	<p>An incident resulting in silt and clay material being tracked onto Rhondda Rd occurred on 26 May 2016. Metromix responded with the following actions being implemented:</p> <ul style="list-style-type: none"> washing down all asphalt and concrete pavements within the Teralba Quarry site; installation of additional water sprays on the wheel wash and two section of the road leading to the asphalt road network were concreted work to reduce the potential for carryover of silt and clay material on to the public road system; arrangement with LMCC for hire of a road sweeper. 	Noted
R3.2	The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.			Noted
R3.3	The request may require a report which includes any or all of the following information: a) the cause, time and duration of the event; b) the type, volume and concentration of every pollutant discharged as a result of the event; c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event; d) the name, address and business hour's telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort; e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants; f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and g) any other relevant matters.			Noted

Condition No.	EPL Condition	Verification	Comment	Compliance
R3.4	The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.			Noted
	Dust Monitoring Report			
R3.5	The licensee must submit to the EPA a report in respect of the ambient air quality monitoring conditions within this licence at the end of each reporting period. The report must be submitted with the Annual Return. The report must be prepared by a suitably qualified person and include: a) an assessment of the data against air impact assessment criteria in the EPA's Approved Methods and; b) an assessment of the data in relation to the weather information required by this licence; and c) an outline of any management actions that have or will be taken to address any exceedances. <i>Note: Air Impact Assessment Criteria are contained in the EPA's Approved Methods for the Modelling and Assessment of Air Pollutants in NSW.</i>	<ul style="list-style-type: none"> • 2014 Annual Review section 4.4 and Appendix 2 page 66 • 2015 Annual Review section 4.4 and Appendix 2 page 66 	<p>An annual air quality monitoring report and an assessment of the monitoring against limits as specified within the Environment Protection Licence has been reported in the Annual Review (Project Approval 10_0183 Schedule 5 condition 4) for January to December each year. The Annual Reviews and monitoring data is available on the Metromix website.</p> <p>Metromix have not submitted a separate report with the EPL Annual Return for the EPL reporting period (i.e. 1 June 2014 to 31 May 2015)</p>	Administrative Non-Compliance
R4	Other Reporting Conditions			
R4.1	Reporting of water quality limit exceedance The licensee must report any exceedance of the water quality limits to the regional office of the EPA as soon as practicable after the exceedance becomes known to the licensee or to one of the licensee's employees or agents.	<ul style="list-style-type: none"> • 2014 Annual Review section 4.1 and Appendix 2 page 67 to 73 • 2015 Annual Review section 4.1 and Appendix 2 page 67 to 73 	Two heavy rainfall events (April 2015 and February 2016) resulted in water overflow from the Mine Adit. This water was not an overflow from the Teralba Quarry water management system and could not be controlled by Metromix. The overflows were reported to the EPA in accordance with Environment Protection Licence 0536 condition R4.1 as advice, as the overflow water did not result from the Teralba Quarry activities.	Compliant
R4.2	A noise compliance assessment report must be submitted to the EPA within 30 days of the completion of the bi-annual noise monitoring. The assessment must be prepared by a suitably qualified and experienced acoustical consultant and include: a) an assessment of compliance with noise limits presented in the Noise Limits table; and b) an outline of any management actions taken within the monitoring period to address any exceedances of the limits contained in the Noise Limits table.	<ul style="list-style-type: none"> • Noise Monitoring – Teralba Quarry, Spectrum Acoustics, Sep 2014 • 2014 Annual Review section 4.2 • Noise Monitoring – Teralba Quarry, Spectrum Acoustics, 12 Jul 2015 • 2015 Annual Review section 4.2 • Noise Monitoring – Teralba Quarry, Spectrum Acoustics, 13 Sep 2016 	Attended noise monitoring was conducted during night-time, shoulder and daytime periods by Spectrum Acoustics to address the requirements of Project Approval 10_0183 Schedule 3 condition 8(d), Project Approval 10_0183 Appendix 3 - Statement of Commitment 10.6, and EPL 0536 condition L5.2. The noise monitoring was conducted 2 times per year August 2016 and November 2016. The reports were attached to the Annual Review submitted in accordance with Project Approval 10_0183 Schedule 5 condition 3. The attended noise monitoring conducted for the Teralba Quarry demonstrated that the operations	Compliant

Condition No.	EPL Condition	Verification	Comment	Compliance
		<ul style="list-style-type: none"> Noise Monitoring – Teralba Quarry, Spectrum Acoustics, 16 Dec 2016 	and activities are compliant with the noise criteria in EPL 0536 condition L5.2. The Noise Assessment Compliance Reports were not submitted directly to the EPA within 30 days of completion.	Administrative Non-Compliance
R4.3	Reporting of Blasting Monitoring The licensee must submit to the EPA a report in respect of the blast monitoring required by this licence at the end of each reporting period. The report must be submitted with the Annual Return. The report must be prepared by a suitably qualified and experienced person and include: <ol style="list-style-type: none"> an assessment of the monitoring against limits as specified within this licence; and an outline of any management actions that have or will be taken to address any exceedances of the limits specified within this licence. 	<ul style="list-style-type: none"> 2014 Annual Review section 4.3 and Appendix 2 page 65 2015 Annual Review section 4.3 and Appendix 2 page 65 	An annual blast monitoring report and an assessment of the monitoring against limits as specified within the Environment Protection Licence has been reported in the Annual Review (Project Approval 10_0183 Schedule 5 condition 4) for January to December each year. The Annual Reviews and monitoring data is available on the Metromix website. Metromix have not submitted a separate report with the EPL Annual Return for the EPL reporting period (i.e. 1 June 2014 to 31 May 2015).	Administrative Non-Compliance
7	General Conditions			
G1	Copy of Licence to be kept on the Premises			
G1.1	A copy of this licence must be kept at the premises to which the licence applies.			Compliant
G1.2	The licence must be produced to any authorised officer of the EPA who asks to see it.			Noted
G1.3	The licence must be available for inspection by any employee or agent of the licensee working at the premises.			Noted
G2	Contact Number for Incidents and Responsible Employees			
G2.1	The licensee must operate 24-hour telephone contact lines for the purpose of enabling the EPA to directly contact one or more representatives of the licensee who can: <ol style="list-style-type: none"> respond at all times to incidents relating to the premises; and contact the licensee's senior employees or agents authorised at all times to: <ol style="list-style-type: none"> speak on behalf of the licensee; and provide any information or document required under this licence. 	<ul style="list-style-type: none"> Letter from EPA re Contact Form, 22 Sep 2016 	The contact details for environmental licence matters were provided to the EPA by Metromix on the on 9 October 2016, in response to the letter received from the EPA dated 22 September 2016.	Compliant
G2.2	The licensee is to inform the EPA in writing of the appointment of any subsequent contact persons, or changes to the person's contact details as soon as practicable and in any event within fourteen days of the appointment or change			Noted
8	Pollution Studies and Reduction Programs			
U1	Assessment of Metals Leaving the Premises			
U1.1	At Points 4 and 5, the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1 of the table below. The licensee must use the corresponding units of measure,	<ul style="list-style-type: none"> EPL Variation condition U1.1, 7 Feb 2014. 	Teralba Quarry water monitoring of EPA approved monitoring points 4 and 5 (i.e. Mine Adit Dam A and discharge at the end of pipe from Dam B) has	Compliant COMPLETE

Condition No.	EPL Condition	Verification	Comment	Compliance
	<p>sampling frequency, and sampling method specified opposite in Columns 2, 3, and 4 respectively.</p> <p>a) Monitoring at point 4 and 5 in accordance with U1.1 for total and dissolved (Antimony, Barium, Beryllium, Boron, Molybdenum, Silicon, Sulfur as S, Silver and Titanium) is no longer required from 1 June 2015.</p> <p><i>Note: Special Frequency 1 means in the event of a discharge, a grab sample of the water discharged must be collected:</i></p> <p>a) <i>within the first 8 hours of any discharge occurring; and</i></p> <p>b) <i>weekly thereafter for the duration of the discharge.</i></p> <p><i>At points 4 and 5 the licensee must monitor (by sampling</i></p>	<ul style="list-style-type: none"> • Teralba Quarry Water Monitoring Results, Sep to Dec 2013 • <i>Initial Report for Condition U1.1 and U1.2 for Environment Protection Licence 536, Aug 2014</i> • <i>Second Report for Conditions U1.1, U1.2 and U1.3 for Environment Protection Licence 536, April 2015</i> 	included the analysis of the concentration of each pollutant specified in Column 1 of Table U1.1.	
U1.2	<p>The monitoring program for the specified pollutants must be conducted for 24 months, commencing on the date of issue of this licence.</p> <p>Upon completion of the first 6 months of monitoring, all results must be submitted for review to the EPA's Regional Manager-Hunter at PO Box 488G Newcastle 2300. All monitoring results must be submitted on the seventh monitoring month and no later than 30 January 2015. Metals not detected during the first 6 months of monitoring may be removed from this PRP. The licensee may formally request the removal of non-detected metals by submitting an application to vary this licence. The licensee must provide appropriate documentation in support of this application.</p> <p>To avoid any doubt, unless a variation been granted in writing by the EPA, all metals listed in this PRP must be monitored during the full 2 year period.</p>	<ul style="list-style-type: none"> • <i>Initial Report for Condition U1.1 and U1.2 for Environment Protection Licence 536, Aug 2014</i> • <i>Second Report for Conditions U1.1, U1.2 and U1.3 for Environment Protection Licence 536, April 2015</i> 		Compliant COMPLETE
U1.3	<p>Upon completion of this 24 month monitoring program, the licensee must within two months conduct an assessment of metals detected in the discharges in accordance with ANZECC water quality guidelines.</p> <p>The licensee must provide this assessment report within one month following the completion of the assessment and include all sampling results from the study.</p> <p>The assessment report and the sampling results, including any recommendations and actions must be submitted to the EPA Regional Manager-Hunter at PO Box 48G Newcastle NSW 2300 no later than 30 October 2016.</p>	<ul style="list-style-type: none"> • <i>Final Assessment Report for the Pollution Reduction Program,</i> • <i>Environment Protection Licence 536, Sep 2016</i> 		Compliant COMPLETE

Attachment D - Environment Protection Licence No. 13015

Condition No.	EPL 13015 Condition	Verification	Comment	Compliance									
1	Administrative Conditions												
A1	What the Licence authorises and regulates												
A1.1	<div><div>This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation. Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.</div><table><tr><th>Scheduled Activity</th><th>Fee Based Activity</th><th>Scale</th></tr><tr><td>Resource Recovery</td><td>Recovery of general waste</td><td>>0 Tonnes recovered</td></tr><tr><td>Waste Storage</td><td>Waste Storage -other types of waste</td><td>>0 Tonnes stored</td></tr></table></div>	Scheduled Activity	Fee Based Activity	Scale	Resource Recovery	Recovery of general waste	>0 Tonnes recovered	Waste Storage	Waste Storage -other types of waste	>0 Tonnes stored		The scheduled activity classification, fee-based activity classification and the scale of the operation have been managed by Metromix since 31 July 2015 (following transfer of the EPL from LMCC).	Compliant
Scheduled Activity	Fee Based Activity	Scale											
Resource Recovery	Recovery of general waste	>0 Tonnes recovered											
Waste Storage	Waste Storage -other types of waste	>0 Tonnes stored											
A2	Premises or plant to which the licence applies												
A2.1	<div>The licence applies to the following premises: Metromix, Rhondda Road, Teralba NSW 2284 Lot 1 DP 224037</div>		The scheduled activities have been conducted on an area of approximately 2.1ha adjacent to the active Teralba Quarry Southern Extraction Area, within Lot 1 DP 224037.	Compliant									
A2.2	<div>The licence applies to the premises detailed in the survey map title “Plan showing environment protection licence within Lot 1 DP234037 off Rhondda Road, Teralba” dated 4 Feb 2010 from file.F2004/10378 prepared by “CMR” and provided to the DECCW via email on 5 Feb 2010.</div>			Noted									
A3	Information supplied to the EPA												
A3.1	<div>Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence. In this condition the reference to "the licence application" includes a reference to: a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.</div>			Noted									
2	Limit Condition												
L1	Pollution of Waters												

Condition No.	EPL 13015 Condition	Verification	Comment	Compliance																
L1.1	Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.	<ul style="list-style-type: none">Protection of the Environment Operations Act 1997, section 120	No direct discharge of waters to the environment occur from the 2.1ha area adjacent to the active Teralba Quarry Southern Extraction Area, within Lot 1 DP 224037	Noted																
L2	Waste																			
L2.1	The licensee must not cause, permit or allow any waste to be received at the premises, except the wastes expressly referred to in the column titled "Waste" and meeting the definition, if any, in the column titled "Description" in the table below. Any waste received at the premises must only be used for the activities referred to in relation to that waste in the column titled "Activity" in the table below. This condition does not limit any other conditions in this licence.	.	No concrete for recycling has been received by Metromix to the Teralba Quarry site since July 2015.	Compliant																
	<table><tr><th>Code</th><th>Waste</th><th>Description</th><th>Activity</th></tr><tr><td>NA</td><td>Building and demolition waste</td><td>As defined in Schedule 1 of POEO Act as in force from time to time.</td><td>Resource recovery Waste storage</td></tr><tr><td>NA</td><td>Asphalt waste (including from road construction and waterproofing works).</td><td>As defined in Schedule 1 of POEO Act as in force from time to time.</td><td>Resource recovery Waste storage</td></tr><tr><td>NA</td><td>VENM</td><td>As defined in Schedule 1 of POEO Act as in force from time to time.</td><td>Resource recovery Waste storage</td></tr></table>		Code	Waste	Description	Activity	NA	Building and demolition waste	As defined in Schedule 1 of POEO Act as in force from time to time.	Resource recovery Waste storage	NA	Asphalt waste (including from road construction and waterproofing works).	As defined in Schedule 1 of POEO Act as in force from time to time.	Resource recovery Waste storage	NA	VENM	As defined in Schedule 1 of POEO Act as in force from time to time.	Resource recovery Waste storage	The area of the Teralba Quarry site that received concrete waste prior to 31 July 2015 was licensed to the LMCC. The EPL 13015 was transferred to Metromix in July 2015. The approximately 30,000t of concrete waste that was received by LMCC prior to July 2015 has been crushed and screened by Metromix and will be sold as required.	Noted
	Code	Waste	Description	Activity																
	NA	Building and demolition waste	As defined in Schedule 1 of POEO Act as in force from time to time.	Resource recovery Waste storage																
	NA	Asphalt waste (including from road construction and waterproofing works).	As defined in Schedule 1 of POEO Act as in force from time to time.	Resource recovery Waste storage																
NA	VENM	As defined in Schedule 1 of POEO Act as in force from time to time.	Resource recovery Waste storage																	
L2.2	Not with standing any limit specified in the above table, the licensee shall not exceed the authorised amount specified in this licence. Where the authorised amount is less than the total of all wastes listed above, the authorised amount takes precedent.			Noted																
L2.3	The authorised amount of waste permitted on the premises cannot exceed 37,000 tonnes at any one time.			Noted																
2	Potentially offensive odour																			
L3.1	No condition of this licence identifies a potentially offensive odour for the purposes of section 129 of the Protection of the Environment Operations Act 1997. <i>Note: Section 129 of the Protection of the Environment Operations Act 1997, provides that the licensee must not cause or permit the emission of any offensive odour from the premises but provides a defence if the emission is identified in the relevant environment protection licence as a potentially offensive odour and the odour was emitted in accordance with the conditions of a licence directed at minimising odour.</i>	<ul style="list-style-type: none">Protection of the Environment Operations Act 1997, section 129	No offensive odours are generated from the activities within Lot 1 DP 224037.	Compliant																
3	Operating Conditions																			
O1	Activities must be carried out in a competent manner																			

Condition No.	EPL 13015 Condition	Verification	Comment	Compliance
O1.1	Licensed activities must be carried out in a competent manner. This includes: a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.		The processing, handling, movement and storage of materials and substances used to carry out the Activity on Lot 1 DP 224037 are carried out in a competent manner.	Compliant
O2	Maintenance of Plant and Equipment			
O2.1	All plant and equipment installed at the premises or used in connection with the licensed activity: (c) must be maintained in a proper and efficient condition; and (d) must be operated in a proper and efficient manner.		All equipment operated at the Teralba Quarry on Lot 1 DP 224037 by Metromix are maintained in accordance with the manufacturer's specifications at the on-site workshops.	Compliant
O3	Dust			
O3.1	The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.	<ul style="list-style-type: none"> Air Quality Management Plan, Oct 2013 		Noted
O3.2	All areas must be maintained at all times which effectively minimises the emission of wind-blown or traffic generated dust.	<ul style="list-style-type: none"> Air Quality Management Plan, Oct 2013 	Operations and activities at the Teralba Quarry were observed to be managed to minimise the emission of dust from the premises.	Compliant Ongoing
O3.3	The licensee must ensure that no material, including sediment or oil, is tracked onto the public road from the premises			
O3.4	Trucks entering and leaving the premises that are carrying loads must be covered at all times, except during loading and unloading.			
O4	Emergency Response			
O4.1	The licensee must maintain, and implement as necessary, a current emergency response plan for the premises. The licensee must keep the emergency response plan on the premises at all times. The emergency response plan must document systems and procedures to deal with all types of incidents (e.g. spills, explosions or fire) that may occur at the premises or that may be associated with activities that occur at the premises and which are likely to cause harm to the environment. If a current emergency response plan does not exist at the date on which this condition is attached to the licence, the licensee must develop an emergency response plan within three months of that date.	<ul style="list-style-type: none"> Environmental Management Strategy, August 2013 	The Environmental Management Strategy section 10 provides the procedures to be implemented in the event of an emergency within the Teralba Quarry site. The emergency response outlines procedures to be followed for mobile or fixed plant fires, bushfire within or encroaching on the Teralba Quarry site, hydrocarbon spill response and failure of quarry high-wall or unplanned collapse of quarry floor.	Compliant
O5	Other Operating Conditions			
O5.1	Fire control There must be no burning or incineration of waste at the premises.		No burning or incineration of waste has occurred on the Teralba Quarry site.	Compliant
4	Monitoring and Recording Conditions			
M1	Monitoring Records			

Condition No.	EPL 13015 Condition	Verification	Comment	Compliance
M1.1	The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.		All monitoring required to be conducted by this licence will be recorded and retained in accordance with this condition	Compliant Ongoing
M1.2	All records required to be kept by this licence must be: (a) in a legible form, or in a form that can readily be reduced to a legible form; (b) kept for at least 4 years after the monitoring or event to which they relate took place; and (c) produced in a legible form to any authorised officer of the EPA who asks to see them.		Records and documentation associated with the operation of the Teralba Quarry are kept in a legible form and available on request from the Site Manager. Environmental monitoring results are available on the Metromix website.	Compliant Ongoing
M1.3	The following records must be kept in respect of any samples required to be collected for the purposes of this licence: e) the date(s) on which the sample was taken; f) the time(s) at which the sample was collected; g) the point at which the sample was taken; and h) the name of the person who collected the sample			Compliant Ongoing
M2	Recording of Pollution Complaints			
M5.1	The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.		All complaints received by Metromix in relation to the operation and activities of the Teralba Quarry are recorded on the Complaints Register and available on the company website.	Compliant Ongoing
M2.2	The record must include details of the following: (a) the date and time of the complaint; (b) the method by which the complaint was made; (c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect; (d) the nature of the complaint; (e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and (f) if no action was taken by the licensee, the reasons why no action was taken.	<ul style="list-style-type: none"> Community Complaints Register, 2016 Community Complaints Register, 2015 Community Complaints Register, 2014 	The Community Complaints Register records: <ul style="list-style-type: none"> date of the complaint; method by which the complaint was made; any personal details of the complainant where provided; nature of the complaint; action taken and any follow-up contact with the complainant. 	Compliant Ongoing
M2.3	The record of a complaint must be kept for at least 4 years after the complaint was made.		A summary of complaints will be posted on the Metromix website.	Noted
M2.4	The record must be produced to any authorised officer of the EPA who asks to see them.			Noted
M3	Telephone Complaints Line			
M3.1	The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.		Contact telephone numbers for Metromix head office and Teralba Quarry site are listed on the Metromix website – Contacts.	Compliant

Condition No.	EPL 13015 Condition	Verification	Comment	Compliance
M3.2	The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.		The contact telephone number for the Teralba Quarry is notified on the Entrance to the quarry off Rhonnda Road and on the for Metromix website – Contacts.	Compliant
M3.3	The preceding two conditions do not apply until 3 months after the date of the issue of this licence.			Noted
5	Reporting conditions			
R1	Annual Return Conditions			
R1.1	The licensee must complete and supply to the EPA an Annual Return in the approved form comprising: (a) a Statement of Compliance; and (b) Monitoring and Complaints Summary. At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.	<ul style="list-style-type: none"> Annual Return for 31 July 2015 to 16 July 2016 	The Annual Return for EPL 13015 was submitted to the EPA on the approved forms including a signed Statement of Compliance; and a Monitoring and Complaints Summary.	
R1.2	An Annual Return must be prepared in respect of each reporting period, except as provided below. <i>Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.</i>	<ul style="list-style-type: none"> Annual Return for 31 July 2015 to 16 July 2016 	The Annual Return for EPL 13015 was submitted to the EPA for 31 July 2015 to 16 July 2016, on 25 August 2016.	Compliant
R1.3	Where this licence is transferred from the licensee to a new licensee: (a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and (b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period. <i>Note: An application to transfer a licence must be made in the approved form for this purpose.</i>			Not applicable
R1.4	Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on: (c) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or (d) in relation to the revocation of the licence - the date from which notice revoking the licence operates.			Not applicable

Condition No.	EPL 13015 Condition	Verification	Comment	Compliance
R1.5	The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').	• Annual Return for 31 July 2015 to 16 July 2016	The Annual Returns for EPL 13015 have been submitted to the EPA on the approved forms within 60 days of the end of each reporting period.	Compliant
R1.6	The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA	• Annual Return for 31 July 2015 to 16 July 2016	A copy of each Annual Return supplied to the EPA is retained by Metromix.	Compliant
R1.7	Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by: (c) the licence holder; or (d) by a person approved in writing by the EPA to sign on behalf of the licence holder.	• Annual Return for 31 July 2015 to 16 July 2016	The Annual Return for EPL 13015 has been submitted to the EPA on the approved forms including a signed/certified by Metromix Directors.	Compliant
6	General Conditions			
G1	G1 Copy of licence kept at the premises or plant			
G1.1	A copy of this licence must be kept at the premises to which the licence applies.	•	A copy of EPL 13015 is kept at the Teralba Quarry premises.	Compliant
G1.2	The licence must be produced to any authorised officer of the EPA who asks to see it.	•		Noted
G1.3	The licence must be available for inspection by any employee or agent of the licensee working at the	•		Noted
7	Special Conditions			
E1	Environmental obligations of the licensee			
E1.1	While the licensee's premises are being used for the purpose to which the licence relates, the licensee must: a) Clean up any spill, leak or other discharge of any waste(s) or other material(s) as soon as practicable after it becomes known to the licensee or to one of the licensee's employees or agents. b) In the event(s) that any liquid and non-liquid waste(s) is unlawfully deposited on the premises, such waste(s) must be removed and lawfully disposed of as soon as practicable or in accordance with any direction given by the EPA. c) Provide all monitoring data as required by the conditions of this licence or as directed by the EPA.			Noted
E1.2	In the event of an earthquake, storm, fire, flood or any other event where it is reasonable to suspect that a pollution incident has occurred, is occurring or is likely to occur, the licensee (whether or not the premises continue to be used for the purposes to which the licence relates) must: a) Make all efforts to contain all firewater on the licensee's premises; b) Make all efforts to control air pollution from the licensee's premises;			Noted

Condition No.	EPL 13015 Condition	Verification	Comment	Compliance
	c) Make all efforts to contain any discharge, spill or run-off from the licensee's premises; d) Make all efforts to prevent flood water entering the licensee's premises; e) Remediate and rehabilitate any exposed areas of soil and/or waste; f) Lawfully dispose of all liquid and solid waste(s) stored on the premises that is not already securely disposed of; g) At the request of the EPA monitor groundwater beneath the licensee's premises and its potential to migrate from the licensee's premises; h) At the request of the EPA monitor surface water leaving the licensee's premises; and i) Ensure the licensee's premises is secure.			
E1.3	After the licensee's premises cease to be used for the purpose to which the licence relates or in the event that the licensee ceases to carry out the activity that is the subject of this licence, that licensee must: a) remove and lawfully dispose of all liquid and non-liquid waste stored on the licensee's premises; b) rehabilitate the site, including conducting an assessment of and if required remediation of any site contamination			Noted